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AUTHOR Smith, Sue; And Others
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ABSTRACT

A unit used in an Australian school to teach English-as-a-Second-Language (ESL) students how to write a discussion is described. The 3-week unit was planned and implemented jointly by an ESL resource teacher, class teacher, and teacher librarian. The class was divided into three heterogeneous groups, two of which were observed for this study and one of which was studied in greatest depth. Texts for student reading, selected by the teachers as models of the discussion genre, and texts written by students during the unit were analyzed. Lessons were also videotaped for analysis of classroom communication. Results indicate how the teacher built and used students' knowledge and guided development of discussion, using a teaching cycle in which her role changed as student learning developed. She had greater input at the beginning of each stage of the cycle, less input towards the middle as students were able to work more independently, and a larger role toward the end as students consolidated knowledge and learning. Techniques used included reading and deconstructing information to inform student writing, introduction of metalanguage to examine the genre of discussion, and use of student knowledge for writing discussion. (MSE)

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ED 390 276

CHILD ESL & LITERACY RESEARCH NETWORK

WRITING A DISCUSSION

by
Sue Smith
Viki Kane
Jane Wessels
& Peter Wignell

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The
Child ESL & Literacy Research Network
of the
National Languages and Literacy Institute of Australia
and the
Centre for Studies in Language in Education -
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Writing a Discussion

Sue Smith, Viki Kane, June Wessels & Peter Wignell

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The Northern Territory Child ESL and Literacy Research Network Node would like to thank June Wessels, Viki Kane and the students of year 6/7 at Manunda Terrace Primary School for participating in this research. The assistance of the NT Literacy Research Network Nodes Advisory Committee has also been greatly appreciated.

FOREWORD

This study is a report of research generated by the National Languages and Literacy Institute of Australia's Child ESL and Literacy Research Network. The Network, funded by the NLLIA through the Australian Language and Literacy Policy, was set up to promote research into aspects of child ESL and literacy policy and practice, and to develop greater dialogue and collaboration amongst researchers in the higher education sector, classroom practitioners and education systems.

This study is the result of a collaborative effort between classroom practitioners and the Northern Territory University with expertise in applied linguistics located within the Centre for Studies of Language in Education.

The report outlines the steps a classroom teacher has taken in order to teach the specific language requirements of the discussion genre within the context of writing for community involvement. The inclusion of resources, texts completed by the students, the teacher's program and segments of teacher-talk are combined with the theoretical underpinnings of genre teaching. It would be possible for other teachers to make use of the methods and/or content of this unit as described in this report.

I would like to acknowledge the contribution of Sue Smith, Project Officer for NT Literacy Research Nodes and Peter Wignell as well as the classroom teachers, June Wessels and Viki Kane who collaborated as partners in this research.

The NLLIA and the NTU have very fruitfully collaborated on several projects and this study is a contribution of this joint work. The feedback from teachers has so far been very positive. I look forward to a continuing collaboration with the Northern Territory University in the interests of improved educational practice for Literacy.

Joseph Lo Bianco
Executive Director
The National Languages and Literacy Institute of Australia Ltd

Introduction

There have been a number of publications in recent years which have offered English language teachers advice on how to teach students to write. These guidelines have included numerous models and recommended strategies. This publication does not focus on offering teachers more guidelines and recommendations on how to teach writing, but instead details the way a classroom teacher has successfully taught her class how to write in a particular genre. By showing the teaching and learning practices in a classroom setting it is hoped that teachers will be given an example of a direction they might choose with their own classes.

A survey conducted recently by the NT Child ESL and Literacy Research Node found that teachers wanted more than the guidelines usually available in published materials. There was an indication from teachers that they wanted access to more practical teaching resources. It is hoped that documenting a successful example of actual teaching practice will address this need and that other teachers may be able to apply some of the methods in their own classrooms.

Details about the School

The research for this publication was conducted in an urban primary school in Darwin. The class observed was a Year 6/7 class, which are the final two years of primary school in Darwin. The students in this class ranged in ages from 10 to 12 years and could be described as a typical ethnic mix for an urban Darwin setting. The class included a number of students who were from Timorese, Vietnamese, Cambodian and Greek backgrounds and some students who were Aboriginal. The class teacher has had many years of classroom experience and had taught this class for six months before the research work began.

Rationale

This research was carried out through the Northern Territory node of the Child ESL and Literacy Research Network which is funded through the National Languages and Literacy Institute of Australia (NLLIA). This research node is one of two which have been established within the Centre for Studies of Language in Education at the Northern Territory University. The aim of this research was to document examples of actual classroom practice of literacy teaching. A survey of all upper primary and junior secondary teachers of English and Social Education in the Northern Territory identified a need for this type of research that could lead to the development of resources which focus on the genre-based approach to literacy teaching. Research which documents an example of genre-based pedagogy in action provides an example for other teachers to implement these practices in their own classrooms.

Methodology

One particular Darwin school was identified as a research site because the classroom teachers were known to have an interest in the application of a genre-based approach to the teaching of writing in the classroom. They were, at the time, post-graduate students of the NTU Faculty of Education and were asked about being involved with this research into literacy teaching in the classroom. The choice of the topic for unit was theirs after some initial consultation about the aims of the research project. Once the unit of work was chosen, the way the research would be carried out was discussed and organised. It was agreed that the lessons would be video taped. This was done so that it was possible for the researchers to track the talk in the classroom while the teaching occurred. It was agreed that a visual record would make this tracking of the talk between the teacher and both individual students and the whole class more accurate than simply relying on audiotaping the lessons.

Before the unit of work began the researcher was introduced to the students and the recording equipment was set up in the classroom. This was done on two or three occasions to allow the students to become used to the presence of the video camera.

Once the teaching of the unit began, the researcher observed five lessons taught by the classroom teacher and four lessons taught by the ESL resource teacher. These lessons were spaced at the beginning, the middle and the end of the unit of work so that there were examples at each stage in the process. Texts were written by the students and texts which the students were required to read were also collected as part of the research. This was done in order to examine the texts, particularly the ones written by the students. It was possible to establish how the language features which the teacher had taught the students were learned when the students were able to apply them to their own written texts.

Purpose of the Unit

This unit of work was devised to develop the students' ability to write a text which weighs up different points of view on an issue. In genre terminology this is known as a "discussion" (Knapp and Callaghan: 1989). The teachers involved indicated that focussing on the structure of a discussion was considered more central to the unit than focussing on a conclusion derived from the discussion. The unit had links with social literacy since it revolved around an actual issue of social significance; nuclear power.

The unit of work was developed in the context of whether a nuclear power station should be built in Darwin. In order to simulate writing for a real audience, the topic was introduced to the students as a request for expressions of interest that was placed in a teacher-fabricated newspaper advertisement. The unit was intended to provide familiarity with the language features of a discussion while deconstructing and discussing the values of the chosen field. That is, understandings about writing in a particular genre were developed in conjunction with the building up of field knowledge.

Structure of the Unit

This unit was taught as a cooperative planning, programming and teaching (CPPT) unit. The unit was planned jointly by the three teachers who would be teaching it to the class. At this school a CPPT unit extended over three weeks, with one hour a day, four times a week set aside for the unit.

A CPPT unit is planned by the ESL resource teacher, the class teacher and the teacher librarian. The unit is integrated into the class teacher's program and the class is divided into three groups for the CPPT sessions. Each of the teachers takes one of the groups which greatly reduces the student ratio. (For more information about CPPT see appendix 5)

The class was divided into three groups which were approximately the same size (up to ten in each group) and were judged by the class teacher to be an equivalent mix of ability. More of the ESL students were in the group taught by the ESL resource teacher but they were not exclusively in this group, with students from NESB in all of the three groups. While the class teacher, the ESL resource teacher and the librarian were involved with teaching one group of students each, only the groups taught by the class teacher and the ESL resource teacher were observed for the purposes of the research. The classes were taught in separate learning areas. The class teacher's group remained in the classroom, the ESL resource teacher's group used the ESL withdrawal room and the third group used the library. The majority of the research concentrated on the class taught by the classroom teacher.

The texts to be read for information gathering were chosen by the teachers as were the models of the discussion genre to be used. All students, regardless of the group they worked in, used the same texts and models and had access to the same information.

The observations of this unit of work showed the way the teacher built and used the students' knowledge and how she guided the development of the discussion. The teacher used a teaching cycle in which her role changed as the students' learning developed. The teacher had greater input at the beginning of each stage of the cycle and less input towards the middle of each stage as the students were able to work more independently. She had an increased role towards the end, although not to the same degree as the beginning, as the students' knowledge and learning was consolidated and she checked the work the students had completed. The teacher assisted the students to build knowledge through activities such as reading and deconstructing information, which were used to inform the written texts the students produced. The students' knowledge was used by the teacher to go on to the next step of the discussion. The discussion was guided by the teacher. She provided the students with knowledge about the structure of the discussion and developed knowledge about that structure by introducing the students to a metalanguage (a language for talking about language) which the students could then apply to their writing. The classroom talk was directed by the teacher and used to draw out the students' knowledge so that the field knowledge could be utilised in the writing of the discussion.

Field and Genre

In order for the students to be able to write a discussion, considerable work was needed to build the field of knowledge so the students had information to use when writing about the topic of nuclear power. It is here that there were advantages for a unit such as this to be taught in a primary school setting, that is, in a setting where the class spent much of their day with the one class teacher and where time was not necessarily rigidly divided into different subject areas. By adopting an interdisciplinary approach to the teaching of this unit, the class teacher was able to incorporate many elements of field knowledge into her teaching program during the day, in order to introduce vocabulary and concepts to the students which they could utilise in the writing of their discussion. This was done through incorporating much of the background field knowledge into the daily class lessons on language arts and social science so that the students from all three of the groups benefited from this.

The initial building of the field knowledge, through reading a novel called Children of the Dust, took place over a period of approximately two weeks followed by the CPPT unit which lasted for three weeks.

Introducing the Field

The discussion topic centred on whether a nuclear power station should be built in Darwin. The topic was relevant to the students because it focused on a possible consequence for Darwin and consideration of the topic also involved coming to terms with the broader issues of the nuclear debate. The topic was also timely as a visit to Darwin by an American nuclear-powered submarine had caused much public debate about safety issues and this event had received a great deal of continuing media coverage. The students were therefore able to draw on their knowledge in this context and relate this knowledge to the proposed topic.

To be able to write about this topic the students required quite specialised knowledge about nuclear energy, its advantages, its disadvantages and its alternatives.

Background information on the nuclear debate was introduced to the students through the children's novel Children of the Dust (see Appendix 1 for publishing details and precis). The class teacher read this novel to the class and they were required to respond with journal writing.

The following is an example of the journal responses written while the story was being read:

13/4/93
Sarah (the main character) is sent home from school because atomic bombs were bombing England. When she got home she found Veronica nailing blankets and sheets against the window. There was also plenty of supplies in the kitchen including a commode. Eventually Buster the dog was sent outside to die. I didn't really like how Buster was sent outside. I canunderstand how he has to be sent out but I don't really agree with it.
14/4/93
Sarah told William that the real reason why Buster could not come in was of the radiation. Veronica put on some garbage clothes and went out into the cloud of dust for some luxury reasons and some survival reasons mainly to get Buster. Sarah does not think that it is worth surviving. I agree with her. I would not be able to stand living in a condition like that.
(by Renee)

Reading this novel gave the students the opportunity to examine some of the values associated with the nuclear debate in a way which has an impact on them. By becoming involved with the characters of the story, the students produced some reflections which contributed to the building of the field for the discussion they would write. To do this successfully the students developed skills in making intertextual inference.

The teacher had introduced the students to the field knowledge through the use of the narrative. Thus the students began with a text type with which they were familiar in order to build up the field, before being introduced to a new text type. This field knowledge at this stage was still tied to a specific context, the novel and reflections on it. The examples were personal and linked to the context of the novel. For example someone would have had to have read the novel to know who "Buster the dog" and "Sarah" were.

Summary of the Novel

The novel centred on a family living in contemporary Britain and the way their lives were affected by a nuclear war. While the mother, a son and one daughter were killed by the radiation following the war, the younger daughter survived. The father also survived, unbeknown to the rest of the family, as he found shelter in an underground bunker. The radiation caused mutant humans to be born who were genetically more adapted to the changed conditions on the earth. This caused a tension between the surviving human population, which included offspring of the father born after the war in the bunker, and the mutant people, some of whom were offspring of the surviving younger daughter. The mutants appeared repellent to the humans, and, although they were better adapted to the new environment they did not have advanced technology. The humans had knowledge of technology which the mutant people wanted to access. Eventually this was solved by characters in the story, one human and one mutant, who discovered they were cousins.

The following are other examples of the students engaging with the text through their journal responses while building the field knowledge.

19/4/93
I think Sarah is a very brave teenager who cares enough to give up her own life for somebody else. I think this story is very touching and brings tears to your eyes.
(Renee)

30/4/93
Today we are introduced to a new character named Simon. It has been 55 years since the bomb. Simon is on a mission. While he is on this mission he sees this dog that he thinks is going to attack this girl. So he shoots the dog and cuts himself on the leg. The girl helps him and he sees fur on her hands. He thinks she looks like an ape. The people in the bunker are now suffering and the computers they had are not working. I think the people deserve that because when the outsiders were suffering they were not. But now the outsiders are going well.

7/5/93
The outsiders were prepared to let the people in the bunker come and live with them and given them food. But Simon is rude and doesn't want them to. I think Simon doesn't want to probably because the way they look, just because they have white fur and white eyes with a little black dot in the middle. I think its not fair, you should never judge people by how they look.
(Kathy)

19/4/93
Veronica has decided her time has come. She takes some tablets and dies. William and Sarah are dying too. Sarah's duty is to find Catherine a house. Catherine must survive. She must build a new future. Sarah must give her another place to live, away from the radiation. She goes to live with a man called farmer Johnson. I admire Sarah's courage to save her sister even though she is only 15 but her attitude is that of a 30 year old. They kept some calves that weren't sick for Catherine. They also gave her some seeds to build a new future.

29/4/93
Bill wakes Ophelia in the morning and says that Colonel Allison has arrived to steal the cattle. Catherine is in labour with a newborn child. One of the people who survived birth (but not from Catherine) was born deformed and had 2 heads - one looked a bit normal but the other was completely formed and had a bit of brain sticking out of the head.
Catherine's child is born healthy and will survive. They named the child Allison after Colonel Allison. Johnson has an argument with the Colonel about the cattle being taken and while they're

talking they hear an explosion. They see a figure running away and they knew it was Dwight. Ophelia and Bill must return to the bunker but Dwight cannot. I think Dwight thought he did the right thing and I believe he should use more self control. I believe Ophelia needs to learn more about what is going on for she is frightened and confused.

7/5/93
As Simon goes to sit down at breakfast he sees all the mutant people coming in and chatting but when they see him they stop and stare. As Laura introduced him people stopped staring. But the children kept asking rude questions. Most of the kids had never seen a proper human. Simon was outraged, all these people having pity on him. He didn't understand why. He yelled at Laura who is trying to help him only to send her away in tears. Simon has to learn that his race is pretty well over.
(Ashley)

By using the novel in this way, the class teacher was not only able to introduce the students to some of the values and issues involved in the nuclear debate, she was also able to achieve some other purposes. The students developed quite a good working knowledge of concepts such as "radiation", "half-life" and other nuclear related vocabulary. They also had the chance to discuss the current policy of the Australian Government towards nuclear energy. This gave the students a position from which to participate in the discussion.

The language the students used in their journals could be described as being subjective and personal, in some ways similar to spoken text. It was also context dependent, since the journals do not make sense to someone who has not read the novel. In the discussion the students need to develop skills in writing more independent of a specific context.

Building the Field

The topic for the unit was introduced to the students on the first day of their CPPT unit. The teacher gave the students a photocopied page out of the classified section of The Northern Territory News and read the advertisement "Attention Darwin Residents."

ATTENTION DARWIN RESIDENTS

The Nuclear Universal Kilowatts Enterprise group (NUKE) and the Australian Commission for the Future Energy and Resources Department (ACFERD) are currently discussing a proposal to build a nuclear power station in Darwin by 1997.

It is anticipated that, at present usage, reserves of natural gas will be depleted by the year 1999 necessitating the replacement of the present Channel Island Power Station.

The Australian Government is seeking public opinion about this project as the construction of a nuclear power plant will involve a change in official policy.

Please direct all queries and submissions to:
The Commissioner ACFERD
GPO Box 2600
Canberra
ACT 2601
Closing date for submissions 30th May 1993

The students were asked by the teacher for their responses to this advertisement. After initial inquiries about its authenticity, which the teacher did not respond to in order to preserve the idea of the students' writing for a genuine audience, the students were able to discuss the implications of the advertisement in the context of their field knowledge which had been built up over the previous weeks, using ideas which they had discussed in the classroom. The teacher used spoken language as the starting point for the students to become familiar with the new text type.

Teacher: What is this advertisement actually telling us? Layla?

Layla: That they're going to replace the Channel Island power station with a nuclear power station.

Teacher: Ok. Now at the moment, we've done some reading on this. What's our government policy, in Australia, at the moment (several hands go up) regarding nuclear power stations? Phillip?
Phillip: We aren't allowed to have a nuclear power station.

The teacher drew on what the students already knew to introduce a new text with a different social purpose. In this instance the students were able to draw on the knowledge they had already built up through discussing the nuclear issue in the context of the novel and their knowledge of Government policy to comment on the significance and implications of the advertisement in the Darwin paper. The

advertisement was, of course, invented by the teacher but this was not made clear to the students. Since the teacher wanted her students to have a 'real-life' purpose for understanding this research she wanted to establish and maintain a sense that they would be writing for an authentic audience.

In summary, the teacher was able to draw on what the students already knew about the nuclear issue, combined with their knowledge of current government policy, to introduce a new text with a different social purpose. This proved so successful, and the interest from the students was so high, that during the course of the unit, several parents approached the class teacher inquiring about the issues, after hearing their children discuss it at home.

Teacher: Right. Is that what our government says? We aren't allowed? All right. (Several affirmative responses from the students). So this is saying that they ... it says something there that they want to change the official policy. All right. Now what are they asking for the people or Darwin residents to do in this ad? (several hands go up) Marcus?

Marcus: To write to the commissioner and tell them their opinion of what should happen.

Teacher: All right. now why are they asking people to do this? Why are they advertising this in the paper and asking Darwin residents to do it? Richard?

Richard: 'Cos overall its going to be for our ... its going to be our opinion if we want it or not because its going to be for our city and stuff like that.

Teacher: So all of us are going to be affected?

Richard: Yes

Teacher: Is that what you're saying? Layla?

Layla: Because I think that when they said they weren't going to build any power stations, nuclear power stations, in Australia, it was based on a public decision and maybe they're trying to see whether public opinion has changed from when they decided that.

The teacher is able to direct the classroom talk in such a way that it uses the students' previous knowledge and then moves on from there.

Teacher: Ok. So they want our opinion. Once they get our opinion what will they do, do you think? Once we've ... if people of Darwin actually respond to this, what will they do from that do you think? Phillip, how about putting your hand up please mate? Layla again.

Layla: Well, depending on how many people say yes and how many people say no and their reasons for that.

Teacher: Ok. Now do you think people should write in for this? (Several affirmative answers) Why? No, hands up please. Ashley you had yours up first.

Ashley: If it happens, it'll affect ... if any problems happen it'll probably affect all of Australia and affect all of the northern Territory.

Teacher: So the decision will affect everybody. Ok. Marcus what were you going to say?

Marcus: Because if they don't, they're just going to build it without any worries, they're not going to

like, wait to see ... no one sends anything in, they're not going to stop to do anything about it, they'll keep on going ahead with it.

Teacher: And they'll do what they like? (Marcus gives an affirmative response) All right.

Marcus: Without anyone else's opinion.

Because the students understand the context in which the advertisement may affect their lives, there is interest and a genuine discussion of ideas about why a response to the advertisement should be made.

Teacher: Ok. So what would be the best thing? We're Darwin residents. You live in Darwin. We've looked at this a lot over the last few weeks. In fact, we looked at it through a book we read. But that showed us, it was a made up story and showed us the worst case. So you should have in the back of your mind (Ashley: what its going to be like) what the worst problem could be if there was an accident. And what could that worst problem be Phillip?

Phillip: War broke out.

Teacher: No, well that was a war. But say there was an accident with the nuclear power station, what could maybe one of the worst problems be?

Ashley: Radiation leaking and affecting everybody.

Teacher: All right. Including you. Is that right? (affirmative response) So if that's the case then perhaps we should do something about it. What do you think? (Many affirmative responses) Ok, well what are we going to do? Are we going to read this ad and let it go? What are we going to do?

Marcus: We're going to write and tell them that we don't want the plant built.

The teacher has checked here to ensure that the students' thinking has moved away from the context of the novel and is focused on the task she is offering them. She has established the audience for the writing the class will do and she has established that the class needs to respond to the advertisement.

Teacher: All right. What are we going to write?

Richard: Personal opinion.

Teacher: How are we going to write it? That's one thing. Hang on to that thought. Personal opinion, that's good. But I think we could do more than that. I think we could do better than that. Ashley?

Ashley: So that they have to be aware of the dangers that could happen.

Teacher: Good. All right. Anything else? We need to be aware of the problems or the dangers. Is there anything else? Is there anything else that we could say if we're going to write ... if we're going to do this fairly,, should we say anything else as well?

The teacher is aware of the effect of the novel the class has read. The group is responding to the advertisement with good ideas but there is concern that they have already judged the issue for themselves.

Layla: Well, a petition might help. If there are people who don't actually have the time to write in could just sign their names so they know actually how many people...

Teacher: But what would you write on the petition, Layla?

Layla: People who don't want a nuclear power plant I guess and then get people to sign it.

Teacher: But that means you've made up your mind already about this without doing some research. Have you looked into the benefits of this as well as the problems? Have you got evidence to show the people?

Layla: If you had already done this and you were going to write in and you wanted to do something about it then you could always have a petition going.

Teacher: Ok. You could but that research I think will be important. All right? Think about it. Yes?

Ashley: It wouldn't be a petition, you probably also have to count the people who want to have it.

Teacher: All right. We could do that. But go back to the point I was trying to push Layla with and go back to the thing that Richard said. Richard said our personal opinion. Layla said that petition but I said think about the research. Is there something better we can do? Your ideas are great but let's see if we can put all those ideas together.

The teacher used what the students said to her to lead them into the genre. She has worked with what was already known and then introduced the possibility that there are two sides to the issue. She was aware of her goal and guided the students into seeing what it was. While she was aware of the impact of the novel the students read, she encouraged them to think beyond it to the implication this proposal may have for them. She also tried to include in the talk the students' previous experience with writing a certain text type.

Richard: Maybe we could write like an argument or something that shows both points of view and putting your own personal opinion at the end.

Teacher; Great. Now is it actually called an argument when you put both points of view across? Is it?

Marcus: Mrs W____. A discussion.

Teacher: Its a discussion. All right. Now what does a discussion show? What does a discussion show, Ashley?

Ashley: Two sides of a story and it sort of look depends on which side wins.

In this exchange the teacher has set up the notion of a response from the students in a way that addresses a real audience about a topic which they had been learning about. She built on their previous knowledge and focused them in the direction which she wanted their response to be framed. The students achieved this interactively, with teacher guidance. She guided the students into the discussion by first encouraging their responses to the scenario of the nuclear power station and then by asking the students to examine the knowledge which they were basing their responses upon. She made it clear to them that they could not judge the idea of a nuclear power station from the knowledge they had previously developed through reading the novel about a nuclear war alone. At the same time she managed to impart a notion of the genre of a discussion requiring research into the topic, not simply an emotional response, as had been required from the students in their journal responses to the novel.

The Genre - Deconstructing a Discussion

The topic was introduced to the students and a decision to write a discussion in response to the advertisement was made. The focus then shifted from the field to the genre. The teacher drew out the knowledge of the genre which the students already had and explained the main social function of a discussion, considering both sides of an issue in order to be able to choose an appropriate course of action.

Teacher: Ok. Penny, what were you going to say?

Penny: I was going to say the way you make up in a discussion. You just outweigh (sic) the benefits from the effects and if the benefits are high up the one that says you want it is the one which has more effects.

Teacher: Ok. And if the bad parts outweigh the benefits, like if the disadvantages, you'd go for that way?

Penny: Yeah.

Teacher: Do you make your mind up now? ('no' from several students). See, when we first started talking that's what I felt you had done. All right, because maybe of that story we read. I felt that maybe you'd made your mind up and its really good to see that people actually haven't made their mind up and that they're prepared to look at both sides. And its that evidence that'll tell us. And I think writing a discussion is an excellent idea. Its probably the best idea. Because when we send that in it means we've been fair. We've looked at it properly , we've looked at both sides and we've thought about it before we've made the decision.

The teacher directed the classroom talk in order to explain the social function of a discussion.

Models of a discussion

The teacher provided the students with two models of written discussions to deconstruct and examine the language features. (See below.)

1. Should people who live in the city be allowed to keep dogs?

There are many reasons for keeping dogs as pets in the city area but also many people who feel that dogs should not be allowed in the city.

Dogs are often not taken care of properly. They are kept in small backyards and are rarely taken for walks. They are left in a yard all day by themselves while the family are at work. Very little attention is ever given to the dog and it is not a very good life for it. It is no wonder these dogs bark and disturb the neighbours and become a nuisance to the community.

On the other hand not all people treat their dogs this way and why should people who receive a lot of pleasure and enjoyment from dogs suffer? Dogs can make a lonely person's life happy or make a wonderful playmate. It can also teach a child responsibility as they not only get to play with the dog, but also need to exercise, feed and care for the dog.

I feel that we should be allowed to keep dogs in the city because, if taken care of properly, dogs can be a great source of pleasure. As a child I used to enjoy playing and taking care of my pet. There is no greater loyalty a person can get than from a well-cared for dog.

2. Speed Regulations for Trucks

The recent moves by the New South Wales Government to reduce the speed limit for trucks to ninety kilometres an hour is causing a furore which has resulted in truckies going on strike and blockading the state highways. While there are many people who support the Government on this issue, there are also those who support the truckies' stance.

The decision to reduce the speed limit to ninety kilometres an hour was made after the two tragic accidents which occurred before Christmas, 1989. In both accidents, trucks were involved and the coroner's findings have put the blame on the truck drivers.

The national speed limit for conventional vehicles such as sedans and four-wheel drives is one hundred and ten kilometres an hour. It has been found that at this speed, drivers are better able to control their vehicles should something unexpected happen. However trucks are much larger, often pulling two or three trailers (the famous Australian "road train"). If something unexpected happens, these drivers have a great deal more to contend with than if they were driving the family car. It makes a lot of sense for trucks to travel more slowly.

On the other hand, the livelihood of truck owner-drivers depends upon their being able to deliver their loads quickly so that they can pick up another load for the return journey. The faster they can complete their journey, the more loads they can contract for. They have all passed the rigorous test which heavy vehicle drivers have to undergo. The truckies claim that they are the best drivers on the road.

Both the Government and truck drivers put forward convincing arguments. However the issue here is whether we value money more than human life. While we live in a very cynical age, there is still the belief that human life is sacred. Therefore there can be no other resolution of this problem than to impose the speed regulation.

The teacher discussed the background information to the model about speed regulations for trucks then deconstructed its basic features.

Ashley: Truck drivers went on strike because of it.

Teacher: Pardon?

Ashley: Truck drivers went on strike because of it.

Teacher: Did they? You know the background of it Ashley? Do you want to talk about it for a minute please while I find a pen?

Ashley: Well, I was watching the news one day on one of my rare occasions and I saw this thing about truck drivers on strike and it was because truck drivers didn't want to reduce the speed limit to 90 kilometres per hour because it would slow down the whatever you call it, the travelling and they'd have to spend more time on the road.

Teacher: All right. So its going to affect their jobs and time.

Richard: And they won't be able to make more deliveries.

Teacher: And that'll affect their wages? Is that right?

Richard: Yes.

After discussing the background of the issue with the students, the teacher moved on to identifying some of the main features of the genre.

Teacher: Ok. So, if someone said we know what this is about, we know this is the heading, is there another name we could give that heading? Marcus, read it out. He said "Speed regulations for trucks" so we know this discussion is about speed regulations for trucks. Is there a special name we could say instead of calling it the heading, we could call it the something else? Does anyone know? Yes?

(Several students put up their hands and offer answers. The teacher tries to get the students to elaborate on their responses.)

Teacher: It's the thing we're talking about. Let's try issue. All right, let's mark it in and you mark it in on yours.

The teacher and the students read the article, with several of the students sharing the reading with the teacher.

Teacher: All right. So what was the decision? In this one what did they decide to do? Yes Marcus?

Marcus: To lower the speed limit?

Teacher: They decided to lower the speed limit. Ok. All right. Now let's have a look and see if we can work out how a discussion is structured. Ok? We've identified the issue. What other things are there that you're aware of in a discussion? Layla?

Layla: They have an introduction.

Teacher: Right. Yes they have an introduction. It has a special name. Do you know what parts are the introduction Layla?

Layla: The topic sentence ... I can't remember now.

Teacher: You can't remember. Ok. Richard?

Richard: It's a preview, kind of a preview.

Teacher: Good boy. You've remembered a very important word. Eyes back up here. Ok Richard, I think, has done some work with discussion before and he's remembered that the introduction has a special name. We call it a preview. Now when I think of a preview I think of what? What do you think of? Before I ... what do you think of when you think of a preview? I bet you all hire videos and go to the movies.

("That's what I was going to say" from several of the students)

Teacher: Is that what you were going to say Marcus?

Marcus: I was going to say previews are like telling you what its going to be about.

Teacher: So it's giving you an idea.?

Marcus: An idea like of what a discussion is going to be about.

Teacher: So it's giving you an idea.

Marcus: An idea of what a discussion is going to be about.

Teacher: Ok. Penny?

Penny: Like a quick flash through the discussion of what everything's about.

Teacher: Good girl. Just like that video clip does if they want you to hire the movie. They give you a quick flash of it to give you an idea of what its about. And its like an introduction but with a discussion, we're going to call it by its correct name. Its a preview. Can anyone identify which part then is the preview? Which part's actually telling us that quick flash of what this discussion is going to be about? All Penny, your turn again.

Penny: The first paragraph. The very first paragraph.

Teacher: Ok. She's on the right track. I would identify more than the first paragraph. "The recent move by NSW government to reduce the speed limit" is telling me a bit about the background. What were you going to say Richard?

Richard: The first one and the second one.

Teacher: The first one and the second one. Well, I would agree with you. Because I think this one as well is giving me background why it happened. Because of these accidents at Christmas 1989. Both accidents trucks were involved and the coroner's findings put the blame on the truck drivers. So it's from this, this is the preview, this is the flash. It's from that that they've decided to give us both sides and write the discussion. So I would identify both of those as the preview. All right, let's write it in please. It's giving us a flash back of the background behind changing, or wanting to change, the

speed limit for truck drivers. It's putting you in the picture, giving you that flash so you understand what this discussion is about.

By this stage the students have identified and labelled the issue and the preview. The close interaction with the model text and the opportunity to engage with the teacher during this process made the sections of the discussion being referred to more easily understood.

Teacher: All right. Anything else that we need to identify that you are aware of? Penny, you're a good worker today. What were you going tosay?

Penny: The for side and the against side and then you have the summary of what side's what.

Teacher: Well you're really hogging it, aren't you? Ok, so let's deal with the first one that you said. The for side. Ok. What do we call that? Will we say it the for side or will we say something else? Come on. You people said the word before when we decided that we would write a discussion. You said we need to write....

Phillip: Issue.

Teacher: No, it's not the issue. We've got the issue identified. The issue is "Speed regulations for trucks".

Ashley: Personal opinion.

Richard: The opinion's in the last part.

Teacher: No, before ... Good Richard, that was the last part. Penny's right, it's just that I'm looking for another word. What about argument? All right. Our arguments for. And you said arguments against as well, didn't you Penny? All right. Which is which then? "The national speed limit for conventional vehicles such as sedans and four wheel drives is 110 kilometres. It has been found at this speed drivers are better able to control their vehicles should something unexpected happen. However, trucks are much larger, often pulling two or three trailers"

Penny: That one's against.

Teacher: "The famous Australian road train. If something unexpected happens these drivers have a great deal more to contend with than if they were driving a family car. It makes a lot of sense for trucks to travel more slowly". Is that arguments for speed regulations or dropping speed regulations for trucks or is it arguments against.

Ashley: Arguments for.

Teacher: What is it?

Ashley: Arguments for?

Teacher: Arguments for. All right, label it please. If it's arguments for, write it on yours. All right, well if that's arguments for, it's very obvious what the next part is then. What is the next part?

Phillip: Arguments against.

Teacher: Phillip, what is it?

Phillip: Arguments against.

Teacher: Ok, I'm going to come back to that part in a moment. I'd like to look at the last part first. All right, that's the only part that we haven't labelled. We've got all the rest identified. Layla how are we going to identify the last part?
Layla: Summary.

Teacher: Yes, because we include the summary and something else.

Ashley: It starts with "r"

Teacher: Oh, does it? Well you'd better tell us then.

Ashley: I forgot.

Teacher: Marcus?

Marcus: I know. Personal opinion.

Teacher: Yes, your personal opinion. And it has a name that starts with "r" that we could use.

Phillip: Resolution.

Teacher: A little bit like that. Good.

Layla: Recommendation.

Teacher: A recommendation. Ok, now let's have a look at it. Eyes to me before you actually write those things. Now look at all the people still writing. Let's have eyes up to the large copy at the front of the room. "Both the government ".. you've said summary and you've said recommendation. Where does one start and where does one finish? "Both the government and the truck drivers have put forward convincing argument. However, the issue here is whether we value money more than life. While we live in a very cynical age there is still the belief that human life is sacred. Therefore there can be no other solution of this problem than to impose the speed regulation". Which part's the summary? Which part's the recommendation? Yes, Penny.

Penny: The summary's all up to "Therefore there can be no other solution" etc etc.

Teacher: So you're saying the summary's this part here and then what's that last sentence there?

Marcus: No I reckon the last ...

Richard: The last sentence is the recommendation.

Teacher: Ah, excuse me. All right Marcus, what do you reckon then?

Marcus: I reckon the last sentence is the summary and the other bit's the recommendations.

Teacher: Now what is the recommendation. Is that your opinion? Is the recommendation your opinion? What do you think?

Marcus: Oh yeah.

Teacher: After looking at the evidence of both this and this, the writer of this one has decided that they want to impose the speed regulation. Is that their opinion? Isn't that what a recommendation is? What do you think? Ashley?

Ashley: The summary ends at where "human life is sacred".

Teacher: All right. If that's what most people agree. I think I would agree too. So if we label that "summary". And then this last label this piece here "summary" and then that last sentence we're going to label recommendation.

By this stage the students had labelled the structure on their copies of the model discussion. Both groups of students worked with an example of the model on the overhead projector and the teacher labelled the large model as they worked through it together. The students were then explicitly taught specific features which they would need to use in their own writing. The first of these features to be taught was the idea of a main point, followed by the elaboration of that point.

Teacher: All right. I want you to go back now and look at one more thing with me please. This is really important. And I want you to watch carefully. This time you can, once you've recorded summary and recommendation, I'd like to look at this together and I need to make sure, Phillip, that we are watching. I'd like to further deconstruct these two parts and I'd like to look a little bit more closely at the section on arguments for and the section on arguments against and I need Phillip and Marcus to be watching please. All right, these can be further broken down. All right? And the way they can be broken down is actually by identifying the main point the person is trying to get across and thenonce they've given that main point, they tell you a little bit more about it. And the word we use for that is elaboration. That means give more detail. Ok? Now in this one they've really only given us one point and then they've given us lots of detail about that point or about that elaboration. Can anyone identify what the point is in the arguments for? What is the main thing they're trying to tell us before they give us all the extra detail? You can read it from there or read it from your own.

Right. Richard's thinking. Ok, let's have a look. It's definitely got to be ... usually give your point. Layla, usually give your point first and then you explain it in more detail. Now they're saying that it's Ok for conventional vehicles, like your cars, to drive at 110 kilometres an hour. That's fine for a conventional vehicle. Then they continue to explain that it has been found that at this speed drivers are better able to control their vehicles if something unexpected happens. And then it explains further about trucks. "However, trucks are much larger, often pulling two or three trailers, which we call the famous Australian road train. If something unexpected happens these drivers have a great deal more to contend with than if they were driving the family car. It makes a lot of sense for trucks to travel more slowly". So this is what I think. I think all of this is really trying to just explain the point that normal cars can go 110 kilometres an hour and why they can go 110 kilometres an hour and why trucks can't.

This segment of teacher talk clearly shows the teacher shifting between two registers, the pedagogic and content registers, as described by Christie (in preparation). Christie argues that the first order, or pedagogic, register is used in order for the teacher to make explicit what it is the students need to do in order to be successful in achieving the learning while the second order, or content, register is involved with the field knowledge being taught. In this segment of teacher talk, the teacher began by orienting the students in the knowledge, which Christie describes as language in action. Then there is a section of talk which incorporated both the first and second order registers as the teacher concentrated on the content register, which Christie describes as language as reflection. This shift between the pedagogic and content registers shows a significant point in the teaching cycle. The teacher's use of oral language to talk about the language features of the written text was also used here to offer the students a way into the demands of the discussion genre. Spoken language is being used here to talk about the text and this focuses on the requirements of the written text.

This idea of point and elaboration was quite a difficult idea for the students to grasp but the teacher introduced it to the class at this point as they were becoming familiar with the structure of the discussion genre, because it would help them with their note-taking when they were reading and researching alternative fuel sources.

Teacher: Ok. All right so I would probably identify, and this is where your highlighter comes in handy because you can actually highlight the point. Ok? And I think the point is "The national speed limit for conventional vehicles such as sedans and four wheel drives is 110 kilometres an hour. It has been found at this speed drivers are better able to control their vehicles should something unexpected happen". And then it goes on to explain why trucks cannot. And there are two things that you will need to remember. One's the point and the other one's explaining that point in a bit more detail. Why trucks can't travel at that speed and giving the explanation of why they should slow down. Giving the elaboration, the details.

In this explanation, using the model in front of them, the students learned the difference between a main point and elaboration of that point. In this way, the structure of an argument or main point for or against the issue was made clear. Because the students were able to see the model and had the opportunity to become familiar with it, they were able to follow the teacher's explanation. This also provided the students with a structure which would become part of their own discussion.

There was explicit teaching of other structural features of the discussion, using the models as an example.

Teacher: Some discussions actually start part of the discussion with something like an introduction. I could label that part there (On the other hand) as like an introduction. It leads in to the other side of the argument. We're looking at the opposite side. So these words really are not the point. These words are giving you a bit of an introduction into the opposite side of the argument.

Richard: Like on the other hand or on the opposite side.

Teacher: Yeah, that's right. So it's like an introduction. To show you we've now changed from agreeing to disagreeing or vice versa.

Introducing the Structure of the Genre to the ESL Class

The group of students in the ESL resource room with the ESL teacher followed basically the same path during the introduction to the topic and the deconstruction of the discussion structure. The ESL resource teacher had made large labels of all of the "parts" of a discussion. These labels were stuck to the white board in a jumbled order. The students talked about the order for the parts of the discussion before they arranged the labels in the correct order. The students then used the labels to identify the different parts of the model discussion. This was done by showing the model on the white board using the overhead projector and the students moved the labels to the correct places next to the text. The students were then given copies of the models to label.

Teaching the Grammatical Features of a Discussion

All the students were taught certain grammatical features of the model. The ones the teachers concentrated on were tense and conjunction. These features were chosen because the teachers thought the students would require explicit teaching of these features in order to be able to use them in their own written discussion. Tense was taught to the students first.

The students identified the verbs in the model text.

Teacher: ... now yesterday we were looking at something called tense. Anyone remember what I'm talking about? Ashley?

Ashley: Words that communicate if it's past, present or future.

Tense marking in the models was deconstructed and then the students were given an exercise to reconstruct the tense of the models. They were given copies of the model with some of the verbs missing and they worked in small groups to fill in the missing verbs. These were then discussed as a group.

The students also worked with the model to examine conjunction.

Teacher:... yesterday there was another language feature that we looked at. Can anyone remember what we call this one? Either the correct name or the name we used to try and understand a bit more. Penny?

Penny: Those junction words that connect together.

The teacher and students discussed the purpose of conjunction with the text, discussed examples of conjunctions and the way they were used in the text then they made a list of different types of conjunctions.

This was the extent of the work done with the models. The students deconstructed the models for generic structure and examined two language features which the teachers had identified as being important for the students to have an understand for their own writing.

Reading for Information

The students were provided with the material which they were to read for information to write their discussion. This material (see Appendix 2) was selected by the teachers from a variety of sources, including some of the publicity material produced by Ranger Uranium mine. The material was selected by the teachers before the unit began in order for the students to be able to complete the CPPT unit within the time available to the teachers. The teachers organised the reading material into sections which was to be used to help the students with their writing. The material was grouped under the headings "nuclear is clean", "nuclear is safe", "nuclear is cheap" and "nuclear is not clean", "nuclear is not safe" and "nuclear is not cheap". As these had been identified by the teachers as the main areas which the students would be gathering information on, the headings were put into the reading material. It was also decided that it might have been easier for the students to weigh up the evidence if the information was presented in a uniform way. Finally, it was decided that this structure of the information would assist the students in their note-taking and drafting.

Teacher:... a lot of times when you read your information what do we normally look for? What do we normally identify?

Marcus: Main points.

Teacher: Hands up please. Yes?

Penny: Main points and key words.

The teacher encouraged the students to think about the way they read for information. To simplify the process of information gathering for the purposes of writing this discussion, the students wrote down the three main headings for arguments for and three main headings for arguments against. The teacher then told the students that for each of the sub-headings they were to look for two main points.

The teacher worked on this jointly with the students for the first sub-heading, "nuclear is safe". The material was read to the students by the teacher then she supported them as they selected two main points.

For support in their note-taking the students, mainly the ESL class, used the following frame as a way of accessing their information. (Also see Appendix 3).

Writing the draft

The students were given a third framework which was used to help them write the draft of the discussion (see Appendix 3). This framework was structured in such a way that the students were able to transfer the notes they recorded on other frames onto the guiding framework for their draft. As they were writing the students received support from the teachers.

The Teaching Sequence - How lessons were organised

Throughout this unit the teachers used a teaching cycle which consisted initially of periods of greater teacher involvement, where the teacher directed the unit and participated a great deal with the students in order to facilitate learning, and then withdrew from the activities as the students worked more independently.

Periods of both increasing and decreasing teacher involvement typified the way this unit was taught. There were specific times when the teacher was more withdrawn. At every stage, whether it was working with the model, reading for information or writing the draft, the teacher's input was greater at the beginning and end of the sequence of learning. At the beginning of the learning sequence, the teacher's input was greater because she was establishing a knowledge base from which the students could work. At the end of the learning sequence the amount of teacher involvement also increased because she used that time to consolidate and review the students' learning.

At the beginning of the cycle the teacher had a lot of input as she used examples to explain the teaching point. In the middle of the cycle the teacher had less input, withdrawing from the activity of the class as the students participated in the learning more independently. Then at the end of the cycle, the teacher's input increased, although usually not to the level that it was at the beginning, in order to bring the lesson or point together or to facilitate sharing the ideas of information which had formed the lesson.

This cycle was also true of the unit as a whole. The teacher's input was greatest at the beginning, working with the advertisement so that the students could understand the nature of their task, and working with the models so that the students had text knowledge with which to build up the task. While still present in the middle of the unit, her input was less as the students read the material for information and note-taking, and began the draft of their text. At the end of the unit, the teacher's input increased again as she worked with the students on their drafts, to polish them before they wrote a final copy and to stimulate them to reflect on their learning.

Teacher: Who'd made up their mind before we looked at the evidence? Who has an idea already? (several hands go up) Ok, hands down. So have you people ... if you had an idea already, have you got a closed mind?

Richard: Mine changed.

Teacher: That means have you ... if you had an idea already and we've written all this, have you really looked at what we've written? Are you sure? Yes Marcus?

Marcus: I just thought totally get rid of the nuclear power plant ... then since I've had a read

...(inaudible) ... I don't know really what side I'm on.

Teacher: So you're going to have to re-think yours then, is that what you're saying?

Ashley: I'm a fence-sitter. Can I be a fence-sitter?

Teacher: No, you have to make a recommendation for this. I'm not going to let you do that. Richard, did you say you changed your mind?

Richard: Yeah.

Teacher: Why?

Ashley: He wanted it, now he's changed his mind.

Teacher: All right. Let Richard explain.

Richard: Well probably because my dad said it was good and also he gave me a point about the other side.

Teacher: What did he say?

Richard: He said a nuclear power plant would be good for Darwin because our city's always growing and ... but ... I believed that was true but then after reading all the other arguments against it, I changed my mind.

Teacher: Ok, so you were quite prepared to go along with what your dad said until you read some more evidence?

Richard: Yeah.

Teacher: All right. What I'd like ... All right Ashley.

Ashley: My dad reckons that it would be the most ridiculous thing that could happen.

Teacher: Why? Did he have a reason?

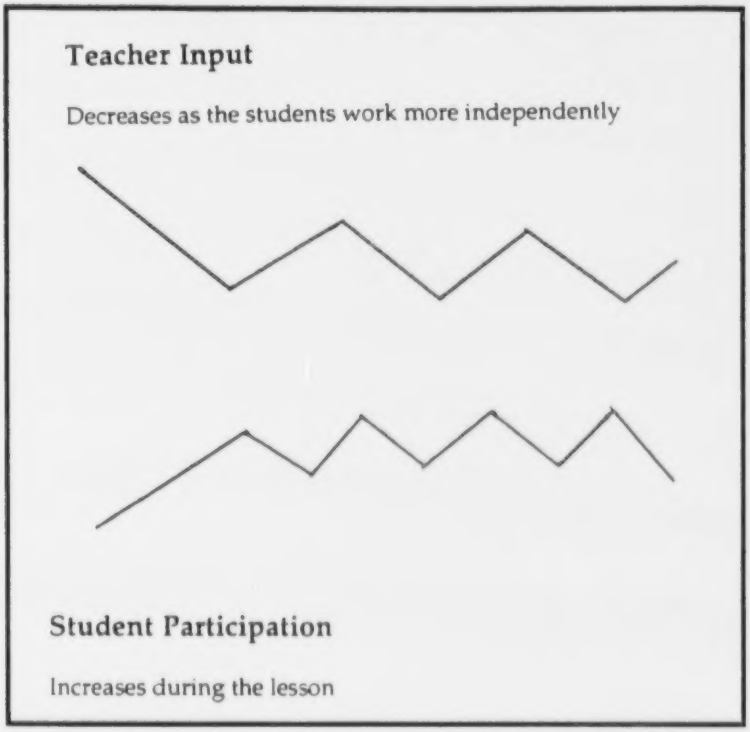
Ashley: I can't remember. It was about two weeks ago that I told him.

Teacher: All right. What do you think? You're still not sure?

Ashley: No. I don't know because they've both got good arguments and it would be good to have one but it would be good not to have one.

This demonstrates that the students have developed an understanding of the purpose and function of a text such as a discussion which presents the reader with arguments from both sides then makes a recommendation for one side over the other. They appear to have also learned that the more informed you are the less clear cut things seem.

The teaching sequence used during this unit of work can be described as involving a series of waves, in terms of the degree of direction and input from the teacher at any given point. The teacher's input began at a high level and gradually decreased as the students' input increased. Then the teacher's input increased again, beginning from the point where the students currently achieved.



Christie (in preparation) described the relationship between the first and second order registers as important because the students required the pedagogic register to be explicit in order for them to be successful with the content register. In other words, the students knew what was expected by the teacher at every stage of the cycle and knowing this, they knew where and how to proceed. The teacher was successful in making the first order register explicit and thus created the environment in which success in the second order register was more likely to follow.

The diagram of the teacher's input and the students' participation during the lesson illustrates the type of input both the students and the teacher had. The teacher's input was greatest at the beginning of the lesson while she explained to the students what she expected them to do during the lesson. The students' active involvement could be described as at its lowest at this point here because they were dependent upon the instructions which the teacher was giving them. From this stage, the teacher's input gradually decreased as the students were able to begin work on task with an increasing degree of independence. When the students completed the task, the teacher's input again increased as she directed the students to share the ideas they had been working on. The teacher's input was maintained as she outlined the next task for the students to complete. It should be noted, however, that the teacher was able to begin at a lower initial level of input the second time as she built on the students' previous knowledge. The students began at a higher level, using the previous work as a basis for the next task.

This series of "waves" of teacher/ student involvement was typical of the way individual lessons and the unit of work as a whole was organised. This could be described as a pattern of waves on different scales. That is, the overall wave like pattern of the unit was replicated to varying degrees in individual lessons.

Completed Texts

The discussion texts written by the students were judged as largely successful examples of a discussion (see Appendix 4 for completed texts). Some of the texts were more successful than others when considering the generic structure used by the students. The texts contained elements and language features which were explicitly taught to them during the deconstruction of the models and at other times during the teaching of the unit. The texts showed that the students have a good knowledge of the generic structure. They have a competent grasp of tense and conjunction, and can use the conventional language for presenting an opposing view (eg 'on the other hand').

The more successful texts were also able to conclude their discussion with a summary and recommendation that followed from the body of their texts.

Because of the age of the students features of more 'mature' expository writing, such as nominalisation and grammatical metaphor (Halliday: 1985), were not present to any great extent. The grammar at sentence level could be described as being rather like speech written down, however the generic structure was that of a written discussion. Their choice of language shows a spoken element to it in the way the students have employed phrases such as "some people think" or "many people want", as a way of lending the weight of the majority to their argument.

The students all demonstrated the use of features which were explicitly taught to them. One of the more noticeable of these features was the introduction of the "other" side of the issue with the use of "on the other hand" or a similar phrase. The students also benefited from the use of the research grids and proformas because the required format of the discussion was set out for them. Once their notes had been taken from the material the students read, it was transferred onto the proforma in a way that helped them to organise it as it was put down. The information incorporated into their discussion was scaffolded through the use of the format sheets, offering the students support for their main points as they concentrated on their elaboration and the language features of the text.

The Students - Outcomes of the Learning

The ESL Group

While the emphasis of this research concentrated more on the group taught by the class teacher, the ESL class, taught by the ESL resource teacher was also observed. The students who were in the ESL group completed this unit as successfully as the students in the other groups. They coped well with the language demands of the specified genre and their completed texts were judged to be successful examples of a discussion. They were able to grasp the schematic structure and they were able to use appropriate language. In order to achieve a successful discussion they were taught along very similar lines as the other group. It was, however, important for the ESL teacher to teach some aspects of the language more explicitly than the class teacher did. An example of this occurred when the students were deconstructing the model discussions and identifying and labelling the generic structure of the discussion. While the class teacher covered this fairly quickly and allowed the students to work through the models from the photocopied page, the ESL resource teacher employed more 'hands on' strategies. The students cut up the model discussion and pasted the sections back onto a page with clear labels. They also had to identify and order labels of the generic structure which had been arranged in a jumbled order on the front board. These are only examples to illustrate that it was important for the students in the ESL support class to receive specialist teaching rather than just the 'good' language teaching which was more appropriate for the other groups. It was also the case that the ESL group required longer time to complete most of the exercises. More work was put into conferencing their drafts and more time was spent reading the resource material with the teacher's input.

Examples of written texts

Two examples of completed texts follow. These can be examined for their strengths and weaknesses.

Richard's completed text (class teacher's group)

Should a nuclear power station be built in Darwin?

There are some people who believe we should have a nuclear power station because it's cheaper and does not pollute the environment as much as fossil fuelled power stations. However other people do not want a nuclear fuelled power station. They feel it is unsafe due to accidents and problems with disposal of radioactive waste materials that are harmful to the environment.

Some people say that nuclear power is better than fossil fuels because it is safer, cleaner and cheaper. In western countries nuclear power reactors have three main barriers to prevent leakage of radiation. At Chernobyl where a major accident occurred they had no third barrier to prevent radiation leaking into the environment. Maybe they had no third barrier because of money and technology.

Nuclear power plants are cleaner than fossil fired plants. Nuclear power stations do not release as much pollution and that means it is not as damaging to humans and environment.

In France, two-thirds of their electricity is cheaper than most western countries that use fossil fired power stations because uranium is cheaper than fossil fuels eg. oil, coal and gas.

On the other side some people say that nuclear power is not safe, cheap and clean. Nuclear waste will remain radioactive for thousands of years. The safest methods of deep burial cannot be 100%

guaranteed against natural events in the future eg. earthquakes.

Building and running a nuclear power station is not cheap. A solar power station in the United States costs half billion dollars to build and electricity costs $500 per kilowatt. For a nuclear power station it costs 2 billion dollars to build and electricity costs $5000 per kilowatt.

Nuclear power is not clean because of the danger of radioactive waste and materials. The radioactive waste is very dangerous to humans and the environment. With humans it can cause cancer and deformities in unborn babies and large amounts of radiation can be deadly.

Thus, in summary, both sides put forward convincing arguments. Nuclear power is an alternative to fossil fuels because our supply is running out but at the moment Darwin does not need a nuclear power station. Therefore I believe a nuclear power station is not needed in Darwin because of the danger involved with nuclear power

Written by Richard

The text completed by Richard is a good example of a discussion for a student his age. He has successfully learned to use and develop the specified genre. He has managed to write impersonally, in the third person although he does tend to rely on consensus to introduce points (eg 'some people think'.) The introduction successfully previews the points he intends to develop and establishes that there are two particular points of view.

There is a sentence at the end of the second paragraph which changes register and is therefore not as successful as many of his other sentences. "maybe they had no third barrier because of money and technology" could be described as a weak sentence and doesn't really follow on from the rest of the paragraph. It is also an example of how he has not managed to maintain his established register throughout the text. It could also be said that there are parts of this paragraph where Richard has not managed to maintain the tenor - "At Chernobyl where a major accident occurred they had no third barrier"- it might have been more appropriate to choose a generic participant . It also assumes that the reader knows what a 'third barrier' is. However, Richard's text is a largely successful, sustained piece of writing which reflects the learning which went on during the unit of work.

Do we want nuclear power?

Should Darwin have a nuclear power station?

Some people in this discussion say nuclear power is safe, cheap and clean while other people believe it's harmful, expensive and the waste pollutes our world.

The argument for having a nuclear power station in Darwin is that nuclear power stations will be much safer because there's better international standards. Nuclear power plants are very clean because nuclear power does not give off pollution like coal and oil power plants and the clean waste heat can be used for breeding fish. Nuclear power is cheaper than coal and oil and fossil fuels are running out so we should change to nuclear power.

On the against side some people believe nuclear power is not safe, clean or cheap. Nuclear power is not safe because nuclear waste is highly radioactive for thousands of years. Nuclear power is not clean because if radioactive waste is not stored carefully it could escape air, water and soil. Nuclear power is not as cheap as solar power because someone in the USA worked out that solar power costs $500 a kilowatt but nuclear power costs $5000 a kilowatt. Solar power is ten times cheaper than nuclear power. Sunlight is free and we have plenty of sun in Darwin.

Both sides have strong arguments about nuclear power. I believe Darwin shouldn't have a nuclear power station because nuclear power is not safe enough besides we should be using solar power.

Written by Joe

This text was written by Joe, a NESB student. This text is a successful example of a discussion in that Joe managed to produce the generic structure of a discussion. It could be said that this text is not a highly polished as Richard's and it is much shorter. Joe's non-English speaking background can probably be considered as a significant factor here. It must be noted, however, that Richard was a Year 7 student and Joe was a Year 6 student. His conclusion seems to follow more directly from his arguments that does Richard's. There are some aspects of Joe's completed discussion which rely heavily on the information the students read. In particular, the reference to using the waste heat to breed fish seems to be an unusual example considering the context of Darwin. However, it was a point that was made when the students were reading for information and several of them have used it. Joe has also referred to "this" discussion in his introduction, assuming that the reader knows the context. Joe's completed discussion still shows evidence of the specific language features the students were taught and this text is a successful piece of writing. Both of these texts, however, are less context dependent that the journal entries.

Other completed texts appear in Appendix 4. While all of the texts can be described as successful examples of a discussion some are more successful than others. It should be remembered, however, that there was only a limited time available to the students to complete this unit of work. Some of the weaker examples of completed texts might be stronger if more time to polish and conference work had been available to the students.

Conclusions

This unit successfully familiarised the students with the field of alternative energy sources while developing a discussion text written with a strong purpose for a "real" audience. They produced texts appropriate for the purpose and used field knowledge (although not always completely appropriately) to build the texts. It was a benefit to the unit that the class was able to be divided into smaller groups so that the teacher could work more closely with the students. Co-operative planning and programming between three teachers also provided greater scope and resources from which the teachers were able to draw. One of the teachers indicated that she had planned to write some of the material read by the students, however a lack of time had prevented this. Because of this, it had been difficult for them to find suitable reading material for the students to read independently and there had been more teacher input at the reading stage than had been initially envisaged.

The teachers felt that at the conclusion of the unit the learning outcomes outlined in the original program (see Appendix 6) had been achieved. The teachers were pleased with the finished texts and the way the students had engaged with the issue during the unit. Several of the students had conducted their own research into the issue and brought books and magazines to school to share with the class on such topics as the Chernobyl accident and the way the reaction in an atomic bomb occurs.

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Appendix 1

Children of the Dust

Precis

This teenage fiction novel is set in Gloucestershire, England in the mid-1980s. The novel centres on a family - Bill and Veronica Harnden, Bill's fifteen year old daughter, Sarah, from a previous marriage, and Bill and Veronica's children, Catherine, eight and William, five.

The novel begins with Sarah racing home from school because a major nuclear strike is imminent. Several large European centres have already been destroyed and people are preparing for the attack. When Sarah arrives home she finds her step-mother preparing a room of their home to be used a fall-out shelter. Tinned, food, drinking water and clothing are already inside the room, along with the younger children. Their father, Bill, is away at work and it is assumed he will not make it back to the family home to shelter with them. They try to seal the room as best they can and the attack occurs.

Their house survives the war and they believe they must stay inside for two weeks before it is safe for them to go outside. Unfortunately, it becomes necessary for Veronica to go outside before this time and she tries to protect herself against radiation with plastic rubbish bags. It is Sarah who begins to assume responsibility for keeping the family morale high when the destruction witnessed by Veronica on her trip outside plunges her into depression. When Sarah discovers that their sanctuary has been penetrated by the radio-active dust, which has come in through the chimney, she realises that she, her brother and step-mother will not survive.

But her sister, Catherine, probably will. Catherine has spent all of her time since the attack in a cubby-house constructed of thick blankets over a table. The dust has not affected Catherine. Sarah and Veronica decide that they must make an effort to save Catherine. Veronica makes several trips into the village, looking for uncontaminated food for Catherine and for goods (a gun, some seeds) which will be of use to her in the future. Before long Veronica is affected by radiation sickness and kills herself. Sarah realises that she and William will suffer the same fate but she first takes Catherine to a neighbouring farm. There, the owner, Johnson, had thought a nuclear war had been coming for years and had been preparing for it. Catherine is left in his care and Sarah and William die.

The story then traces the fortunes of Bill Harnden. He had not been killed in the initial attack. By good fortune he had been flagged down on the roadside by a plant geneticist who had a place in a large government fall-out shelter. Her pass also allowed Bill to enter and he decided to go with the woman, Erica, when he realised he wouldn't be able to make it home.

The fall-out shelter is very well equipped. The government's civil defence plan had been for those in the shelter to emerge after the initial two weeks and assist the civilian population. The radiation level were unsafe on the surface for up to six weeks after the attack and by that time the earth had been plunged into a severe nuclear winter which took two years to subside. The bunker was filled with army personnel, administrators and some scientists. When it became obvious that those people would have to continue to live underground for many years to come, they began making plans to recolonise and rebuild on the surface in the future.

A fairly calculated breeding program of humans was adopted and Bill finds himself married to Erica, who produced a daughter called Ophelia. Bill had been a teacher of English Literature before the war and it becomes his role to educate the young people in the fall-out shelter. His notion of education and the Army General in charge of the shelter differ greatly. The Army personnel see his wish to encour-

age the young people to think for themselves as sedition.

One of the young students hears of a plan to confiscate the outsiders' cattle for the bunker's benefit. In an effort to prevent this, Bill, Ophelia and some of the others go to the surface and happen to find Catherine and Johnson. They now have a central role in the building of a new, very different world. Mutant children, who are genetically adapted to the higher degree of ultraviolet light are being born. Bill and Ophelia return to life in the bunker but the young radical student remains with the outsiders' community.

Then story then goes forward in time., It has been fifty-five years since the nuclear war. A new generation of children are living in the shelter now, but their time there is limited. Their technology has broken down, they are running out of food and they cling to the hope of returning the earth to what it had been. Ophelia's son, Simon, is part of a party sent out in search of alternative living arrangements and they will probably become part of an outsiders' community. Simon meets Laura, Catherine's grand daughter. Although the new people are genetically superior to the likes of Simon, he is made to realise that humans still have an important role in the history of the earth. It will be up to the people in the bunker to provide the technological knowledge the new people need to know in order to develop and not plunge the world into a second dark age. There is acceptance of the new people by the humans and those in the bunker take on their new challenge.

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Appendix 2

Reading for Information

Arguments for Nuclear Power

Nuclear is safe

After the nuclear accident at Chernobyl in 1986 the question arose: Was this the beginning of the end of nuclear power? No, nuclear power is here to stay. Before the accident, the nuclear power industry had achieved more than 4,000 power reactor hours of operating experience without a single death due to accidental radiative releases.

The accident at Chernobyl in the Soviet Union has raised questions and renewed concerned about the safety of nuclear power. It is a widely recognised fact that the design of the reactor at Chernobyl is different from nuclear plants in operation in the West. The Soviet-type reactor had no containment building to act as a barrier against radioactive material escaping into the atmosphere, nor did it have the capability to shut down rapidly in case of malfunction. Since then, the Soviet Union has announced plans not to construct this type of reactor again and to implement design modifications and institutional steps to increase the safety of their reactors in general.

The accident was the result of inter-related human factors and design weaknesses. It occurred during a series of departures from operating procedures and rules resulting in 31 deaths and 300 being hospitalised. The long-term radiation effects on populations affected by the accident are still being studied. In the Soviet Union plans are going ahead to study the long-term health effects on people evacuated from the accident area. This will be one of the largest and most complex epidemiological studies ever undertaken and will continue until well into the middle of the next century. In the meantime, studies already carried out have shown that radiation doses received by people in Western European countries proved to be less than anticipated and the long-term health effects are expected to be extremely small and statistically almost impossible to trace.

There is no doubt that the medical consequences of the Chernobyl accident were severe. But the direct effects must be put into perspective with other accidents. They did not reach the level of the chemical industry's accident at Bhopal in India where over two thousand people lost their lives and one hundred thousand were maimed. nor do they reach the annual number of deaths due to air diasters. In 1985 alone over 1,700 lives were lost in 11 major air diasters. These were neither the death knell for the chemical industry nor for air travel. Nor will the deaths resulting from the Chernobyl accident be the death knell for the nuclear industry.

Nuclear power plants in the West are built with multiple barrier system so that should one fail, sufficient additional barriers and systems still exist to protect the public and the environment. Nevertheless, lessons have been learnt from the accident in the Soviet Union. Since then the question of nuclear safety has acquired a much stronger international dimension. The nuclear community, both at national and international levels, is taking active steps to achieve a new record of excellence in safety.

At the national level and particularly in European countries action is being taken to improve operator training and to review nuclear safety systems. At the international level several organisations, including the International Atomic Energy Agency (IAEA) and the Nuclear Energy Agency (NEA) of the Organisation for Economic Cooperation and Development (OECD), have responded to the call to review safety measures. Groups of IAEA experts in nuclear plant safety are being sent to Member States to evaluate plant operations and provide advice to operators on how to enhance plant safety. The NEA is reinforcing its activities in the area of training operators and other reactor personnel, upgrading its Incident Reporting System and reviewing the general safety approaches currently in use in the nuclear power plants of its member countries.

For the future , nuclear reactors are being developed which will be passively safe and incapable of meltdowns. Already now the technology to achieve these goals is within reach.

Nuclear is clean

Nuclear power plants do not emit pollutants into the atmosphere as do fossil-fired plants. Through the increased use of nuclear power, emissions of pollutants from the fossil-fuel it substitutes have been reduced. In Finland, sulphur dioxide emissions per kilowatt hour of electricity were reduced by a factor of five between 1974 and 1984. Total emissions decreased by 40%. In Belgium, sulphur dioxide emissions from power stations decreased by a factor of three between 1980 and 1986. During that period the generation of nuclear electricity increased by over 200%.

Radioactive Emissions: The main effect on the environment from generating electricity from uranium is the release of radioactive material. Limits imposed on permissible radiation doses to the general public from nuclear plants are based on more than 70 years of experience with man-made radiation. Radiation is around us all the time. It is part of our every day life. Living within a 50-mile radius of a nuclear power plant involves less radiation over a one year period than flying at high altitudes from Sydney to Perth and back or even looking at a colour television for a year. The radioactivity released from a coal-fired power plant has greater significance on the health of human beings than the radioactivity released from a nuclear power plant. In fact, among the principal fuels for electric power production, nuclear power has the lowest adverse impact on human health and the environment.
Radiation emissions from nuclear power plants are carefully monitored. It was through routine monitoring of nuclear power plants in Sweden that the accident at Chernobyl was revealed to the West. In most countries maximum limits of radiation releases are set by national authorities. These limits generally follow the recommendations of the International Commission of Radiological Protection (ICRP), which have been universally accepted for the last 58 years by both national and international bodies responsible for radiation protection.
Since the accident at Chernobyl, there is a renewed awareness of the need for close radiation monitoring. As a result, one of the international conventions agreed upon after the accident aims at early notification of all accidental releases of radioactive material that may result in transboundary effects. Closer co-operation between individual nations is also increasing, especially between the European countries most affected by the accident.
More than 20 countries have voluntarily sent data on their environmental measurements to the IEAE and the World Health Organisation (WHO). This information will be the basis of an assessment of the accident's possible long-term health Effects of Atomic Radiation (UNSCEAR). At the same time, development of a long-term co-operative program between international organisations (World Meteorological Organisation (WMO), IAEA, WHO and UNSCEAR) is also underway. Its aim is to improve post-accident prediction of environmental consequences, environmental monitoring capabilities and planning of counter-measures and information exchange.
Waste Nuclear Heat All steam powered electrical generating plants, whether fired by fossil fuel or nuclear fuel, have a common potential problem in their need to release waste heat to the environment. Heat from the combustion of fossil fuel or from the fission of nuclear fuel in an reactor produces steam at high temperatures and pressure which, in turn, drives a turbine connected to a generator. The "spent" steam from the turbine is condensed by passing large amounts of cooling water around condensers in separate circuits. In nuclear power plants, as in other conventional power plants, most of the waste heat is discharged to the environment either through cooling towers or through the release of the cooling water. This causes slightly elevated temperatures in the atmosphere and waterways near the plant.
In Switzerland such waste heat provides district heating to eight communities from just one of its nuclear power plants. In China, plans are going ahead to construct a nuclear reactor for supplying heat to the residents of the city of Harbin. Steam from several nuclear electricity plants in the Soviet Union is being used for district heating and further schemes are underway. The warm cooling waters from nuclear power plants are also being used to breed fish and heat greenhouses in France, Canada, the Federal Republic of Germany, Japan, Switzerland and the Soviet Union.

Nuclear is cheap

Nuclear electricity is often synonymous with low-cost electricity. France, for example, generates over two thirds of its electricity from nuclear power and enjoys among the lowest electricity tariffs in the world for industrial use. In Belgium, where nuclear power provides close to 70% of the country's electricity, tariffs have remained stable.
In comparing the electricity generating costs of nuclear and coal-fired plants, the results depend on a number of factors. There is no single global answer. In most situations large nuclear power plants becoming operational in the near future can produce electricity cheaper than coal-fired power plants. In some places where power plants are built close to coalfields electricity can be supplied at costs competitive with or lower than nuclear plants. Even taking into account the fall in the price of oil, the generation of electricity from nuclear power plants remains generally more competitive economically than from oil-fired plants.
The key to this is the low cost of nuclear fuel as compared with the cost for fuelling a fossil-fired plant. Capital investment in a nuclear power plant is the most expensive item in costing nuclear electricity. Fuel costs contribute only 15% to 30% of the total cost of electricity. In turn, the cost of raw uranium contributes less than a third of the fabricated fuel cost.
By comparison, for coal-fired plants, the cost of raw fuel accounts for 40% to 65% of total generation cost. For oil-fired plants it has been as high as 85%, although this has been reduced over the last year due to the fall in the world oil price. It is this clear that fossil- fuelled plants are much more sensitive to fluctuations in the prices of fuel than nuclear power plants are to variations in the price of uranium. Only hydro-power, with its limited possibilities for expansion, can compete with nuclear power on low-cost electricity and that is because the water that drives the turbines is free.

Federal republic of Germany is slightly larger than the state of Victoria and has a population of over sixty million. It is a highly industrialised economy and nearly half of its electricity consumption is used by industry. Its main indigenous energy resource is coal, which produces more than 50% of the country's electricity.
Since 1983, all coal-fired plants have to fulfil stringent regulations on emissions of sulphur dioxide and nitrogen oxide. Hydro-power has nearly been exploited to it's full extent. For the future the Government will maintain the energy mix of coal and nuclear energy in electricity production.
The country's first nuclear power plant was connected to the grid in 1961. Today there are 18 nuclear plants in commercial operation, two plants being commissioned and three under construction. By the year 2000, three more plants are expected to be constructed.. It is now the country's second most important energy source and by the end of the decade nuclear power is expected to supply about 40% of the country's electricity requirements.

Japan is half the size of New South Wales and has a population of nearly 120 million. It is the most industrialised country in the Asia-Pacific region. There are few indigenous energy sources in Japan and more than 95% of its oil, gas and coal requirements have to be imported. Since the oil crises of the seventies the country's energy policy has been based on diversification: nuclear power, natural gas and coal. The country's first commercial nuclear power plant was commissioned in 1966. By 1970 a further two plants were put into commercial operation. Today there are 33 plants in operation. By the year 2010 it is planned to have 86 in operation and by the year 2030, 112. This will increase nuclear's share of electricity from 28% in 1986 to 49% by the year 2000 and 58% by the year 2030. Today Japan is the world's fourth largest generator of nuclear electricity.

United States of America is slightly larger than Australia and has a population of 234 million. It consumes nearly quarter of the world's total energy production. Primary energy consumption in the past relied heavily on oil and natural gas which up to the 1950s was almost entirely sustained by its indigenous reserves. In 1978, the national Energy Act was signed. It prohibits the use of natural gas or oil for new power plants and prohibits the use of natural gas by existing power plants after 1989.
Domestic sources of oil and natural gas are limited in supply. Only two domestic energy resources can

be counted on to meet expected electricity requirements for the foreseeable future: coal and nuclear. The country's first nuclear power plant went into operation in 1957. By the beginning of 1968 no fewer than 32 reactors were on order. By 1978 there were 71 in operation accounting for 12% of all electricity. This is the largest amount of nuclear electricity produced by any one nation in the world. There are a further 20 nuclear units under construction and two on order. When all construction has been completed by the mid-1990s, nuclear energy will be providing about one fifth of the nation's electricity.

Republic of Korea is less than half the size of Victoria and has a population of 38 million. It has limited energy resources of its own, apart from coal and hydro. On the other hand, it is becoming a highly industrialised country. Over 65% of the electricity produced is used for industrial purposes. The development of coal-fired power plants involve many difficulties and problems, particularly environmental. As a result there will be an increased use of natural gas, which is expected to account for 8.6% of the country's electricity by 1991.
Since the oil crises of the seventies, policy has been to reduce reliance on oil-fired electricity. To do this, the country turned to nuclear energy. The first nuclear power plant cane on stream in 1978. Today there are six nuclear power plants in operation, three under construction and two planned. Nuclear power contributes 44% of the country's electricity requirements. By the year 1996 nuclear power is expected to represent 48.2% of total power production.

Sweden is about the size of South Australia and has a population of 8 million. It is a highly industrialised country and is the third highest per capita electricity user in the world. It has practically no indigenous energy sources and almost all of its electricity is generated from hydro and nuclear power. Hydro - power reached its peak of expansion in the 1960s. Its use is now limited and there is strong environmental pressure against the development of further projects. The use of coal for power production is also limited due to the country's extremely stringent anti-pollution laws, passed in 1984. There are no oil fired power stations: the Government forbids their construction.
The country's first nuclear power plant started commercial operation in 1972. Over 50% of the country's electricity now comes from 12 nuclear power plants. A referendum in 1980- voted to close down the agreed maximum of 12 nuclear power plants by the year 2010. Consideration is now being given to phasing out two of them earlier. There are no further nuclear power plants planned.
No new electricity is needed until the 1990s, by which time the Government will have evaluated the alternative technologies that could contribute to the country's long term electricity and energy supply.

Belgium has a population of nearly 10 million living in an area smaller than Tasmania. It is a highly industrialised country with a number of heavy industries. Belgium only has small amounts of indigenous energy resources, mainly coal. It has no oil reserves and natural gas requirements are imported. Industry accounts for 55% of electricity consumption: more than a third of that amount goes to the chemical industry and another third is used in the iron and steel industries.
The country's first nuclear power plant was installed in 1962. It now has eight nuclear power plants generating nearly 70% of the country's electricity. After France it is the most nuclear dependent country in Europe.
Future plans include the construction of a fifth unit at the site of the nuclear power plant and the supply of nuclear electricity from France's Chooz nuclear power plant. Belgium has a 25% participation in two units at this plant, which are still under construction.

Coal

Coal reserves are large. The economically recoverable coal reserves of the world are estimated at 600 million tons of coal equivalent, or about seventy times the amount of all primary energy fuels used globally in 1975. The environmental effects of generating electricity from this source of energy are well known. Of all the fuels that man employs, coal produces the most copious and complex array of emissions. As a result, acid rain has been blamed for "killing" some of the lakes in Canada and

Scandinavia and some of the forests of Middle Europe and carbon dioxide emissions are aiding the development of the so-called "Greenhouse Effect". This later phenomena is now no longer science fiction but science prediction. According to latest estimates, the earth's temperatures will increase by an average of 2 to 5 degrees Celsius but the 2030s. As a result, researchers believe, greater climatic changes could occur than any experienced over the past 10,000 years. Regulations are gradually being put into place to "clean" the emissions of coal-fired power stations, but even with 90% purification of sulphur dioxide and nitrogen oxide, as achieved in Japan, coal plants still emit large quantities of other pollutants including an assortment of heavy metals such as cadmium, arsenic and mercury which will never lose their toxicity.

Fusion.

This is the process by which the sun produces its energy and by which thermal nuclear weapons (hydrogen bombs) work. Unlike the method of splitting atoms (fission) used in present day nuclear power plants, fusion is the joining or fusing of atoms. Its main advantage would be its ability to offer low-cost electricity in abundance with none of the associated waste disposal problems arising from fission. Resources for fuelling fusion reactors are derived from water and lithium and are available in virtually unlimited quantities. Its main problem at present is the difficulty in harnessing this energy source for peaceful purposes. It is unlikely that its technical feasibility will be adequately demonstrated before the end of this century with commercial viability not foreseen until well into the beginning of the next century.

Gas.

Substantial natural gas reserves are situated in the Middle East (24.2%), while the world's largest proven reserves are in the Soviet Union (42.5%). Here again reliability of supply has been questioned, although over the last twenty years the use of gas for generating electricity has risen nearly two-fold. Now increasingly powerful lobbies are emerging to prevent the use of natural gas for generating electricity. With present known reserves likely to be used up within sixty years at the 1983 rate of production, this clean, safe and convenient source of heat and raw feed stock is better used for domestic purposes and direct heating in industry. It also make a valuable contribution to the chemical industry, providing a wide range of petro-chemicals.

Hydro.

Most of the large hydro-power sources in the industrialised countries have been exhausted. In Europe, hydro-power used to be the back bone of electricity generation, particularly in the 1960s. Several European countries are still dependent on this source for over 50% of their energy needs. Expansion is hampered when problems arise where potential sites are on rivers of great natural beauty. Environmentalists have objected to the flooding effects of hydro-power developments, effects which are often irreversible. Nevertheless, hydro-power will expand globally, although its share of total electricity production is not likely to rise much above the 22% it contributed ion 1980.

Oil.

Due to the sudden rise in the cost of oil in the 1970s and the questionable reliability of supplies from a politically unstable area of the world - the Middle East where two-thirds of the world's oil reserves exist - the need for diversification arose. Present known reserves of oil are expected to last only 33 years at the 1983 rate of production. Oil is too precious to burn in power stations and its use for purposes other than electricity production is generally more efficient.

Renewable sources of energy

These include solar energy, wind energy, geothermal energy, wave and tidal energy. Unlike fossil or nuclear fuels, their reserves are infinite. At present, the costs of harnessing these energy sources are high and often it is not economically practical to do so, especially when converting into electricity. Large tracts of land are necessary for solar electricity plans and fields of windmills are necessary for wind generated electricity. In central Europe, for example, using present technology, about 90 square kilometres of land would have to be covered with solar collectors to produce the same amount of electricity as a conventional 1000 Mwe power plant occupying a few hectares. For any systems generating electricity from wind or the sun, back up systems may have to be installed for the time when the wind does not blow or the sun does not shine. The development of all the "renewables" will continue slowly. Capital costs will to be reduced and it will be necessary to develop ways to collect and distribute the energy so that these sources become economically interesting enough to serve the needs of densely populated areas.

Arguments against Nuclear Power

The Nuclear Power Issue

Nuclear energy is one of a number of power choices available to industrial societies. The fact is that it now dominates the debate. Because nuclear energy provides the solution to society's technological problems, one writer has dubbed it the "technological fix".

Most of the world's energy supplies come from non-renewable fuels such as coal, gas and oil. These exist in natural finite quantities, cannot be renewed once they are used, and can be manipulated by those countries which have them in abundance. When the Arab oil producing countries increased the price of crude oil in the early 1970s, the crisis had far reaching effects on all industrialised countries, particularly those which had no oil resources of their own.

Proponents of nuclear energy as a power source argue that it is cheaper, more efficient, less harmful environmentally and cleaner than present harmful effects like smog, acid rain and the glasshouse effect. Incalculable harm is done to the environment by mining and by oil spillage accidents which lead to the pollution of the sea and coastline. Severe health hazards are posed by the pollutants derived from coal burning which include sulphur dioxide and other poisonous or cancer causing agents.

Acid rain, for example, is caused by gases exhaled from coal burning power plants mixing with oxygen and water vapour in the air. Through a number of interactions these gases change into nitric and sulphuric acids which gather and can be precipitated back to earth as acid rain or snow. When rain falls in sufficient quantities, it kills plants, insects and other forms of life. It can render lakes and streams lifeless because the acids are too strong to be neutralised.

Despite the advent of environmental protection authorities which have formed to police the release of pollutants into the atmosphere, and the technology which now exists to limit them, significant pollution of the atmosphere and the environment still occurs. It is claimed that because nuclear energy does not use carbon based fuels these problems do not arise.

Nuclear energy is supposed to be a cleaner, safer and more effective method of power production than present natural fuels. Opponents of the development of nuclear energy would argue that this is not the case.

They point to the accidents which have occurred in nuclear power plants and which are, because of the radioactivity of the materials involved, more potentially dangerous than an industrial accident in a coal burning plant. They query the efficiency of the technology used in nuclear plants. They are concerned about the disposal of waste produced by nuclear fission and the effects of even low levels of radiation. They are concerned with the mining of uranium and its exportation and with what they see as an essential linkage between nuclear power for peace and nuclear power for war.

The danger from nuclear fuels and wastes has to be balanced against the advantages of nuclear power. The world needs alternatives to fossil fuels which will run out in the future. Those in favour of nuclear power say that it is relatively safe. Many more people are killed every year in coal mines and on oil rigs than in nuclear accidents.

Pollution from radioactive material is not all man-made. There is a certain amount of low-level natural radiation all around us. This is in the form of radon gas which is released from granite rocks all over the world. This "background radiation" is thought to cause minor damage to people but it is not a serious problem. Those people who are opposed to nuclear power argue that humans have no right to add to that damage, harming not only themselves but future generations.

Nuclear is not safe

It is also argued that the distinction between nuclear power for peace and nuclear power for war is not valid. Critics point to the interconnection within the nuclear industry and to the fact that the by-products of peaceful use can be misapplied to make enormously destructive weapons and to the ease with which nuclear weapons can now be developed.

It is known that Iraq is one of several nations which have been trying to purchase plutonium for the manufacture of weapons from sources outside the normal international markets. Given that in the United States alone between 1968 and 1976 some 542 kilograms of enriched uranium and 32.6 kilograms of plutonium disappeared, it is possible that these countries may be finding illicit markets. Some of these amounts are part of normal waste but the problem appears to be that there is no way of telling what is waste and what has been stolen.

Karen Silkwood was one of 87 employees who, in 1974, were contaminated while working in a plutonium factory. Her premature death in a car accident occurred as she was travelling to meet a union official and a newspaper reporter to discuss alleged corrupt practices in the factory. It has been suggested that the affair related to more than alleged breaches of safety regulations by the company. People involved in the case believe she may have inadvertently discovered a nuclear smuggling ring.

Thousands of tonnes of uranium are used in nuclear power stations and bomb factories. The nuclear waste that is left over will remain radioactive for thousands of years. Most of it is far too dangerous to go near. Large amounts of nuclear waste already exists, and more is being made all the time. Safer ways of storing this nuclear waste must be found if we are to protect future generations from its harmful effects.

Nuclear waste from power stations and re-processing factories remains radioactive for thousands of years. The problem of storing nuclear waste for such a long time has still to be fully solved. To stop liquid waste from leaking through the storage tanks, it will have to be taken out and turned into solid blocks. One way is to melt nuclear waste and glass together. The liquid glass is poured into steel drums and left to solidify.

As well as the highly radioactive waste from nuclear reactors, there is an even bigger quantity of rubbish which is only slightly radioactive, called low-level waste. Clothing, brushes and towels used by nuclear engineers are packed into drums and buried in shallow trenches. Some countries have built specially-designed concrete storage sites to deal with the large quantities of low-level waste.

We are making more nuclear waste all the time. The safest way to deal with it is to bury it in specially constructed chambers underground. Because nuclear waste has a lifetime of thousands of years, the waste must be stored in steel caverns which will be sealed up with concrete. The rocks in which it is buried must be hard, like granite, to prevent any cracking. But even the safest methods of deep burial cannot be guaranteed against events like earthquakes in the future.

Fresh uranium rods which are not yet dangerous, go into the reactor of a nuclear power station. Deep inside, the uranium atoms are blasted by neutrons and broken up. More neutrons are set free and the reactor gets hotter and very radioactive. The heat is used to make steam to drive an electric generator. After a few years, the fuel rods are replaced with new ones. The old rods are dangerously radioactive. The used fuel rods from the reactor are so radioactive that they produce their own heat. Even after several months ion a cooling pond they are still too dangerous to handle. Remote-control cranes lift them into a large metal cask. The lid is sealed and the cask is loaded onto a railway wagon. From here the old fuel roads are sent either to a nuclear waste store, or to the re-processing factory.

There have been serious accidents in nuclear reactors all over the world. The usual problem is a broken pump or a leak in the cooling system. All reactors have emergency cooling systems, but even the

best systems can fail, sometimes due to human error. The worst nuclear accident was at Chernobyl. They were trying out a new safety idea, but it didn't work. The reactor overheated. Then it exploded, caught fire and melted.
The liquid waste from a reprocessing factory is a dangerous mixture of radioactive chemicals. It can eat through ordinary steel tanks and leak out. This happened in the United States with nuclear waste left over from making bombs. The hot radioactive liquid soaked into the ground. Experts bored holes to find out how deep it had gone, but had to stop in case the waste seeped down the holes in the water supply.

Nuclear is not cheap

Economically, these sources of energy may be cheaper and more efficient than the hard path technology represented by nuclear power which does not question the real need for energy. It does attempt to meet existing and future demands whether these be rational and necessary or not.
Fritjof Capra cites the use of photovoltaic cells which according to the United States Federal Energy Administration, could produce, over a five year period and for a cost of half a billion dollars, electricity at a cost of $500 a kilowatt. He compares this with a proposed nuclear reactor at Clinch River which, at a cost of two billion dollars, could produce electricity at a cost of 45 000 per kilowatt.
There are numerous questions to be raised about the effectiveness and the efficiency of the nuclear options, some of which have already been investigated. The recent accident at Chernobyl gives a clear insight into the possible costs of taking the nuclear path. As an interesting sidelight, an article appeared in The Economist shortly after the Chernobyl accident, stating that the technology existed for a safe nuclear reactor and that one had been designed and tested in the late 1950s. The implication is that if reactors are designed in particular ways, using particular materials and coolants, there would be no possibility of accidents, fires or even meltdowns occurring.
It is interesting to speculate on the reasons why the design for a supposedly safe reactor were not adopted. Could it be that the design is not economically feasible or that it was too expensive to be developed commercially?
A Japanese nuclear-powered ship leaked radioactivity on its first voyage. The crew tried to repair the leak with rice and old socks but without success. For six weeks the ship was not even allowed to enter harbour. It never did work properly and eventually had to be scrapped at enormous cost.
Reactors do not have an indefinite life. They can be expected to last for approximately 30 to 40 years after which they have to be de-commissioned. This can be a time consuming and expensive task since reactors contain high levels of radioactive waste. Estimates of the cost of decommissioning reactors range from 20 million to four billion dollars, a sum which must be built in to the price of power produced and passed on to the consumers.
These accidents and hundreds of lesser incidents which occur in nuclear power plants raise serious questions about the technological safety of nuclear power generation. Is it justified or is it necessary to become dependent on a power source which is potentially damaging, less safe than other power sources and which may in the long term not be as cheap as has been proposed?

Nuclear is not clean

A nuclear power station only lasts about forty years. After it has been switched off, the de-commissioning work beginnings. This means making it safe. The nuclear reactor must either be sealed up safely or taken away. It is extremely difficult to take an old reactor to pieces. Even if the used fuel rods are removed, many tonnes of highly radioactive waste remains. The simple answer is to build a thick concrete shell round it.
Nuclear power stations do not produce the pollution caused by burning fossil fuels but they present other problems. The radioactive fuel which they use is very dangerous if it escapes into the air, water or soil. The radiation it gives off, even in small amounts can damage human cells, causing cancer in anyone who is exposed to them. It also causes deformities in unborn babies. Large amounts of radiation are deadly.

Although every precaution is taken, accidents are bound to happen. There have been two very serious diasters in nuclear power stations. One was in 1979 at Three Mile Island in the USA and the other was in 1986 at Chernobyl in the Soviet Union. Smaller accidents in Britain and other countries have shown that nuclear power stations cannot be made completely safe.

The other problem is to find a way of disposing of nuclear waste, including used fuel which is still radioactive. Various methods have been tried. These include burying the waste in concrete containers deep beneath the sea or pumping it into disused mine shafts. Whatever methods are used, the material will continue to be dangerous for many years to come. Some forms of waste will be radioactive for centuries.

The nuclear reactor at Three Miles Island in the United States went badly wrong in 1979. A series of mechanical failures and human mistakes combined to prevent cooling water reaching the reactor core. Heat built up in the reactor, making the core overheat. Part of the uranium fuel melted, releasing radioactivity into the air.

There is no agreed method of disposing of this high radioactive waste. It has been suggested that there are currently some 70 million gallons of high level liquid wastes in storage. Some waste products have been stored in steel tanks and dumped in the ocean, but the metal corrodes and leaks into the sea where it can enter the food chain. Similar leakages have occurred on land where liquid waste is stored in metal tanks.

Various suggestions have been made for the ultimate disposal of nuclear waste material , which include dumping it on the sea bed, or in geological formations deep in the earth, or in glass compounds : vitrification: in stable synthetic minerals : synroc: even outer space has been considered.

In vitrification, liquid waste is dried, mixed with molten glass and poured into canisters or cast into blocks. It is possible to reduce the annual waste of a reactor to approximately one cubic meter in this way. Unfortunately glass tends to disintegrate when exposed to conditions of high heat.

Appendix 3

DISCUSSION PLAN

TITLE _____

ISSUE
Statement of
issue _____

_____

_____

_____

Preview _____

_____

_____

_____

_____

ARGUMENT ONE

Introduction _____

Point _____

Elaboration _____

Point _____

Elaboration _____

Point _____

Elaboration _____

ARGUMENT TWO

Introduction

Point

Elaboration

Point

Elaboration

Point

Elaboration

RECOMMENDATION _____

Summary _____

_____

_____

Conclusion _____

_____

_____

_____

_____

Appendix 4

SHOULD A NUCLEAR POWER STATION BE BUILT IN DARWIN?

There are some people who believe we should have a nuclear power station because it's cheaper and does not pollute the environment as much as fossil fuelled power stations. However other people do not want a nuclear fuelled power station. They feel it is unsafe due to accidents and problems with disposal of radioactive waste materials that are harmful to the environment.

Some people say that nuclear power is better than fossil fuels because it is safer, cleaner and cheaper. In western countries nuclear power reactors have three main barriers to prevent leakage of radiation. At Chernobyl where a major accident occurred they had not third barrier to prevent radiation leaking into the environment. Maybe they had no third barrier because of money and technology.

Nuclear power plants are cleaner than fossil fired plants. Nuclear power stations do not release as much pollution and that means it is not as damaging to humans and the environment.

In France two-thirds of their electricity is cheaper than most western countries that use fossil fired power stations because uranium is cheaper than fossil fuels eg. oil, coal and gas.

On the other side some people say that nuclear power is not safe, cheap or clean. Nuclear waste will remain radioactive for thousands of years. The safest methods of deep burial cannot be 100% guaranteed against natural events in the future eg earthquakes.

Building and running a nuclear power station is not cheap. A solar power station in the United States costs half a billion dollars to build and electricity costs $500 per kilowatt. For a nuclear power station it costs 2 billion dollars to build and electricity costs $5 000 per kilowatt.

Nuclear power is not clean because of the danger of radioactive waste and materials. The radioactive waste is very dangerous to humans and the environment. With humans it can cause cancer and deformities in unborn babies and large amounts of radiation can be deadly.

Thus in summary, both sides put forward convincing arguments. Nuclear power is an alternative to fossil fuels because our supply is running out but at the moment Darwin does not need a nuclear power station. Therefore I believe a nuclear power station is not needed in Darwin because of the danger involved with nuclear power.

by Richard.

DO WE WANT NUCLEAR POWER?

Should Darwin have a nuclear power station?

Some people in this discussion say nuclear power is safe, cheap and clean while other people believe it's harmful, expensive and the waste pollutes our world.

The argument for having a nuclear power station in Darwin is that nuclear power stations will be much safer because there's better international standards. Nuclear power plants are very clean because nuclear power does not give off pollution like coal and oil power plants and the clean waste heat can be used for breeding fish. Nuclear power is cheaper than coal and oil and fossil fuels are

running out so we should change to nuclear power.

On the against side some people believe nuclear power is not safe, clean or cheap. Nuclear power is not safe because nuclear waste is highly radioactive for thousands of years. Nuclear power is not clean because if radioactive waste is not stored carefully it could escape into the air, water and soil. Nuclear power is not as cheap as solar power because someone in the USA worked out that solar power costs $500 a kilowatt but nuclear power costs $5 000 a kilowatt. Solar power is ten times cheaper than nuclear power. Sun light is free and we have plenty of sun in Darwin.

Both sides have strong arguments about nuclear power. I believe Darwin shouldn't have a nuclear power station because nuclear power is not safe enough besides we should be using solar power.

By Joe.

NUCLEAR POWER STATION IN DARWIN

Should Darwin have a nuclear power station?

Some people think that nuclear power is safe because with the new reactor people wouldn't be worried and other people say it's safe because it can escape into the air, water and soil.

Many people want the nuclear power station in Darwin. Now, nuclear power station will be much safer because the new safe reactor being developed. With the new reactor the people wouldn't worried of any leaks. Nuclear power is clean and safe to use. It's clean because it's not killing the fish and plants and it doesn't give off a lot of radiation. Nuclear power is cheap. If the nuclear power is cheap people would want to use it and buy it because it's cheap.

On the other hand nuclear power is NOT safe. Nuclear waste is highly dangerous and can be highly radioactive for 1000s of years. Nuclear is NOT cheap. Solar power is much cheaper and also safe. And nuclear power station only lasts 30 to 40 years. Nuclear is NOT clean. Nuclear is not clean because radioactive can escape into our air, water also soil. And it can also wrecks the food chain which will cause deformities in their babies and cancer in people.

In both sides the arguments are very good but I think that we shouldn't have nuclear power station because of the accidents caused to the environment.

By Melanie.

NUCLEAR POWER STATION IN DARWIN?

Should Darwin have a nuclear power station?
Some people believe that a nuclear power plant is a bad idea because of the nuclear waste it produces while some people think that is a good idea because it does not pollute the atmosphere like fossil fuels.

Some people want the nuclear power plant in Darwin. Now nuclear power stations are much safer. Since Chernobyl the nuclear power stations have upgraded the barriers to prevent leakage of radioactive waste. Nuclear power station is clean and safe to use. Without the pollution cause by coal and oil power plants. The power from the nuclear power station is cheap. The uranium that is used for the power station is closer and will be easy and cheaper to get.

On the other hand people say we should not have a nuclear power station in Darwin. Deep storage is not safe because when an earthquake comes the drum will leak and get into the soil and kill everything

that grows in it. Nuclear is not clean. The radioactive waste can leak into the water and soil and can wreck the food chain. Nuclear is not cheap. Solar power costs $ 500 a kilowatt and nuclear costs $5000 a kilowatt and solar power is cheaper to build and nuclear is not cheap to build and it is hard to dispose of it. I think that both sides have got good arguments. I think that nuclear power is not safe because nuclear waste takes a long time to be disposed of.

By Lindsay

DARWIN'S NUCLEAR POWER STATION

Some people say that nuclear is safe, cheap and clean. other people disagree and say it is not safe or cheap or clean to our environment.

Some people say that nuclear power is safe, clean and cheap. Now nuclear power stations are much safer. They have improved barriers to prevent leakage and an improved design. Nuclear power is clean because nuclear power plants have less radiation than other plants eg coal and oil. Nuclear power is cheaper than fossil fuels. because the uranium deposits are closer and easier to transport.

On the other hand some people say nuclear power is not safe, clean and cheap. Old rods are highly radioactive. Old rods are highly radioactive and disposing of them is a big problem. Nuclear is not clean. Leaks can wreck the food chain, cause deformities in babies and cancer in adults and children. Solar power is much cheaper and safer than nuclear power. The safe nuclear power plants are too expensive to build.

I believe that we should not have a nuclear power station because if a war starts it will be a disaster.

By Priscilla

SHOULD A NUCLEAR POWER PLANT BE BUILT IN DARWIN?

Some people believe that a nuclear power plant should be built because it is cheap and does not pollute the environment as much as fossil fuelled power plants. However, other people believe that a nuclear power plant should not be built because they feel it is unsafe due to accidents involving nuclear waste.

On one hand some people agree that a nuclear power plant is a good idea.

In Western countries nuclear power stations have three main barriers to prevent leakage of radiation. At Chernobyl, where a major accident occurred, there was no third barrier to prevent radiation leaking in to the environment. Nuclear power plants are clean because they put nowhere near as much radiation into the environment as fossil fuelled power plants. France has one of the cheapest electricity costs in the world compared with other industrialised countries that use fossil fuel.

On the other side of the arguments, just as many people believe that the power plant should not go ahead. It is well known that nuclear waste stays radioactive for thousands of years. Because of this, it is a problem disposing of nuclear waste, and even deep burial cannot be 100% guaranteed. Nuclear power plants only have a life span of about 30- 40 years. But after they have to be decommissioned and this can cost between 30 million to 4 billion dollars. One of the ways of disposing of nuclear waste is dumping it in to the sea. But this can cause problems because the container can corrode and leak into the sea causing contamination of the food chain.

Thus in summary it would seem that there would se just as many advantages as there are disadvantages to having a nuclear power station. Therefore after examining all the arguments I believe that the risks far outweigh the disadvantages of building a nuclear power station. I strongly recommend that a nuclear power station not be built in Darwin.

By Layla

NUCLEAR POWER STATION IN DARWIN

Some people think that Darwin should have a nuclear power plant because it is much safer and cheaper and does not pollute the environment as much as fossil fuelled power stations. On the other hand people do not want to have a nuclear power station in Darwin because they feel it is unsafe. There is a big problem with disposing nuclear waste which is harmful to the environment.

The people who want a nuclear power station say that nuclear power is clean, cheap and safe.

Nuclear is safe.
Since the accident at Chernobyl power station there is a new reactor being developed that will prevent the danger of a meltdown.

Nuclear is very clean.
Nuclear power is clean because nuclear waste can be used in cool countries to breed fish and grow plants. Without the pollution caused from coal and oil power plants.

Nuclear power is cheap.
Nuclear power is cheaper than fossil fuel because when fossil fuel runs out the prices will go up for buyers and nuclear power will be cheaper.

On the other hand some people think that Darwin shouldn't have a nuclear power plant because there are reasons why firstly.

Nuclear power is not safe.
Nuclear power is very dangerous and can be highly radioactive for 1000s of years.

Nuclear power is not cheap.
Solar power is much cheaper and safer. Nuclear power station only last for 30-40 years.

Nuclear is not clean.
Highly radioactive waste is very hard to dispose of and if the waste leaks into the air it can cause deformities in babies and can affect the food chain.

There are many reasons why we should and shouldn't have a nuclear power station. My recommendation is that we shouldn't have a nuclear power station in Darwin because it can cause problems.

By Linda.

Appendix 5

Cooperative Programming, Planning and Teaching

by Viki Kane and Alison Hobson

What is CPPT?

CPPT is a strategy or an approach to teaching and learning. It should provide a framework for the development and implementation of resource based units of work. CPPT uses the strengths of two specialist teachers in conjunction with the mainstream teacher.

CPPT aims to achieve resource based learning through encouraging students to be actively involved with their own learning. The three teachers in the program further ensure that students' learning is participatory as smaller groups provide students with the opportunity for quality teacher access.

Effective CPPT uses the specialist skills of the ESL teacher and the Teacher Librarian within the context of the mainstream classroom's program. The potential for students to learn is at a peak when students can relate present learning with past knowledge and experience. The purpose of CPPT is then, to develop learning experiences that capably integrate the expertise of the three teachers involved, with the learning activities occurring in the classroom.

By using the CPPT strategy of smaller groups, teachers are giving their students extra attention and assistance, and as a result of this, building their self image as effective learners by maximising their chances of success. As teachers become familiar with the CPPT strategies, they find that it provides a venue for sharing teaching ideas, methodologies and philosophies as well as a successful approach to teaching the required work skills including locating and researching information, note taking and written work using the appropriate language features.

To sum up the advantages:
Teachers- reduced student ratio, opportunity to observe a variety of teaching styles and approaches, lightens the load of an engorged curriculum, shares resources and expertise, reduces the isolation, increases meaningful teacher-student interaction, enables work to be covered more effectively, more penetrating evaluation of student needs and strengths, shares behavioural problems and lastly exposes students to a wider range of teaching styles and expertise.

ESL students are not singled out as different, not missing out on mainstream activities, achieve success along with their peers, ensures cultural inclusion and language accessibility of units of work.

Librarian - technical items shared and easier to use effectively, library and other resources can be accessed to complement the unit.

What types of units are taught using CPPT?

The topic selected depends on the class teacher and usually of the class topic or theme. Usually the class teacher comes to the planning session with a definite idea of what they hope to achieve.

Planning
Planning is crucial to the success of CPPT. As there are at least two other teachers involved, it is important that each teacher is aware and understands the purpose, goals and outcomes of the unit. To ensure the success of the program teachers need to be released so that they can develop learning outcomes and work requirements together. It is possible to build into the program planning time for each unit.

Appendix 6

Should a nuclear power station be built in Darwin?
A Discussion Yr 6/7

Unit Description

In this cooperative programming, planning and teaching (CPPT) unit, students will be organised into three groups. They will develop an understanding of the following main ideas:

* what we choose to say or do expresses our values.
* the values we express always affect other people.

This will be achieved through writing a discussion which shows understanding of the arguments for and against using nuclear energy as a power source. The unit will also focus on developing the students' understanding of the schematic structure and language features of the discussion genre. Therefore the literacy aspects of this unit of work have been emphasised while the Social Education outcomes have been backgrounded.

Rationale

CPPT sessions are an ideal time for teaching understandings about the writing genres as the students are organised into three groups of approximately ten students each. The students were interested in nuclear power and nuclear weapons as the class had been reading the novel Children of the Dust and discussing nuclear issues in relation to the Social Education topic "International relations". At this time an American nuclear powered ship had docked at Darwin wharf and there were a number of issues concerning this in the media. The discussion genre was chosen because it was felt students needed to look at both sides of the nuclear power issue before making up their own minds. This would also help them to develop an understanding of their own values and how these affect other people.

Learning Outcomes

As a result of studying this unit, students will:

Learning Through English
* develop their awareness of the need to evaluate carefully issues presented;
* develop their awareness of the need to consider different points of view before reaching a conclusion;
* develop their understanding of what we choose to say or do expresses our values and the values we express always affect other people;

Learning to Use English
* Develop their ability to listen to, read and discuss a variety of discussion texts;
* develop their ability to identify and evaluate knowledge and information from different viewpoints as well as from their own;
* demonstrate the developing ability to identify and use the schematic structure of a written discussion text;
* demonstrate the developing ability to present balanced arguments for and against an issue, using evidence and/or examples;
* develop their ability to elaborate on points for and against an issue;

* demonstrate the developing ability to write a discussion which follows the correct schematic structure;

Learning About English

* demonstrate developing understandings about the schematic structure of a discussion;
* demonstrate developing understandings of the language features of a discussion;
* develop their understanding that a discussion presents arguments for and against an issue, and should be balanced;
* develop their understanding that the evidence presented should be accurate and substantiated;
* develop their understanding that the recommendation is based on the writer's evaluation of the arguments presented.

Work Requirements

Students are required to:
* listen to, read and discuss factual text for main ideas and understanding in order to research the nuclear energy issue concentrating on obtaining arguments both for and against;
* deconstruct discussion text focussing on structure and language features, and on the presentation of the arguments for and against;
* collaboratively plan and individually write and present a discussion (using the researched information) in a structured text which has a balanced presentation of arguments for and against and uses the appropriate language features, including a valid recommendation.

Resources

Derewianka, B., 1990, *Exploring how Texts Work*, PETA, NSW
Kalantzis, M. & Cope, B., *Social Values*, Social Literacy Series G
Knapp, P. & Callaghan, M., 1989, *Language and Social Power: Teaching Guide for the Discussion Genre*, Disadvantaged Schools' Program Metropolitan East region, N.S.W.
Potter, S., *Writeways*
Assorted pamphlets and booklets from Ranger Uranium Mines.

Program

Language - Learning Experience	Purpose and Content	Classroom Organisation	Language and Thought Skills
Input / Exploration: Introduce scenario of "a nuclear power plant to be built in Darwin" by looking at a simulated newspaper article. Discuss implications of this article for Darwin.	To introduce the issue of nuclear power	Teacher to group	Listening Reading for understanding
Exploration ... Discuss how we can voice our opinions as citizens of Darwin	To develop the idea of writing a discussion as a balanced way of responding	Teacher to whole group	Discussing Analysing
Input: Present an example of a written discussion which shows structure and language features (speed regulations)	To present a model of discussion genre	Teacher to group	Reading Listening
Exploration: Deconstruct the discussion text focussing on the schematic structure.	To identify the schematic structure of a discussion	Teacher and whole group	Analysing Identifying
Input / Exploration... Present students with a second discussion text. Students read and identify schematic structure. (Use a third text if difficulties are still experienced)	To consolidate student' understanding of a schematic structure	In pairs	Identifying Analysing Applying
Presentation: Pairs share identification of structure with group	To demonstrate understanding of schematic structure	Pairs to group	Discussing Justifying

Input / Exploration: Re-present students with first discussion text. Collaboratively identify the following language features - conjunctions, generic participants, verb tense. Treat each separately.	To focus on explicit understandings of language features of a discussion	Teacher to whole group	Listening Reading Identifying
CONJUNCTIONS Exploration... Highlight conjunctions in text. Discuss different types and their functions. Collaboratively categorise and record on class chart.	To focus on explicit understandings of conjunctions	Teacher and whole group	Listening Reading Identifying Categorising
Input / Exploration: Re-present students with second discussion text. In pairs students identify conjunctions.	To demonstrate understanding of conjunctions	Pairs	Applying
Presentation: students share findings and add to class chart.	To demonstrate understandings of conjunctions	Pairs to whole group	Justifying Recording
GENERIC PARTICIPANTS Input / Exploration: Use first discussion text as a cloze activity omitting generic participants. Read and collaboratively discuss to identify appropriate words to complete the text.	To focus on generic participants	Teacher and group	Listening Reading Discussing Identifying
Exploration: In pairs students complete another cloze activity based on the second text.	To demonstrate understanding of generic participants.	Pairs	Applying

Presentation: Students share findings and record results on chart	To demonstrate understanding of generic participants	Pairs to group	Justifying Recording
VERBS (Simple Present Tense - SPT) Input /Exploration: Introduce the idea of SPT. Using first discussion text collaboratively highlight SPT	To focus on SPT	Teacher to group	Listening Reading Discussing Identifying
Exploration: In pairs students identify SPT in second text	To demonstrate understanding of SPT	Pairs	Applying
Presentation: Pairs share and record findings	To demonstrate understanding of SPT	Pairs to group	Justifying Recording
Input / Exploration: Refocus on nuclear power station issue. Students brainstorm what they already know about nuclear power. Teacher records.	To identify students' prior knowledge about nuclear energy.	Teacher and group	Discussing Recalling
Input: Present information on a variety of resources used for power generation.	To compare nuclear energy with other available power resources.	Teacher to students	Reading Comparing
Input / Exploration: Read, discuss texts and compare to nuclear energy as a power resource.	To compare nuclear energy with other available power resources	Teacher and group	Reading Comparing
Input / Exploration: Present pro-nuclear energy texts for research reading	To read for understanding and provide content knowledge	Teacher to students	Reading for understanding

Presentation: Students share findings and record results on chart	To demonstrate understanding of generic participants	Pairs to group	Justifying Recording
VERBS (Simple Present Tense - SPT) Input /Exploration: Introduce the idea of SPT. Using first discussion text collaboratively highlight SPT	To focus on SPT	Teacher to group	Listening Reading Discussing Identifying
Exploration: In pairs students identify SPT in second text	To demonstrate understanding of SPT	Pairs	Applying
Presentation: Pairs share and record findings	To demonstrate understanding of SPT	Pairs to group	Justifying Recording
Input / Exploration: Refocus on nuclear power station issue. Students brainstorm what they already know about nuclear power. Teacher records.	To identify students' prior knowledge about nuclear energy.	Teacher and group	Discussing Recalling
Input: Present information on a variety of resources used for power generation.	To compare nuclear energy with other available power resources.	Teacher to students	Reading Comparing
Input / Exploration: Read, discuss texts and compare to nuclear energy as a power resource.	To compare nuclear energy with other available power resources	Teacher and group	Reading Comparing
Input / Exploration: Present pro-nuclear energy texts for research reading	To read for understanding and provide content knowledge	Teacher to students	Reading for understanding

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Input: Using sample texts on overhead projector, teacher identifies point and elaboration then models point and elaboration developed from recorded main ideas (pro-nuclear energy), emphasising that evidence provided should be accurate and substantiated.	To develop understandings about the presentation of evidence	Teacher and group	Justifying Applying
Elaboration / Reshaping: Collaboratively write second point and elaboration. Students can then proceed individually and/ or in pairs to write third point and elaboration.	To develop understandings about the presentation of evidence	Pairs Individual	Justifying Applying
Presentation: Students share work and discuss Repeat the above process for anti-nuclear energy main ideas.	To further develop and consolidate understandings about the presentation of evidence	Teacher and group	Discussing Justifying
Input / Exploration: Use sample texts and charts to identify language used for introducing arguments. Collaboratively write an introduction.	To focus on specific language features	Teacher and group	Listening Applying Reading Discussing
Reshaping: Students individually write own introductions	To consolidate students' understandings about ways of introducing arguments	Individual	Applying Recording
Input/ Exploration: Review previews in example texts. Discuss content of discussion.	To determine focus of a preview and produce a model	Teacher and group	Discussing Identifying

Input : Teacher models writing of a preview	To determine the focus of a preview and provide a model	Teacher and group	Discussing Identifying Listening
Reshaping: Students individually write preview for own discussion.	To demonstrate students' understanding	Individual	Applying
Input / Exploration: Review recommendations in example texts. (Discuss with students the need for this personal viewpoint to reflect the arguments presented in their discussion)	To focus on how to weigh up the arguments	Teacher and group	Discussing Evaluating Justifying
Reshaping: Students individually write their recommendations based on arguments presented.	To further develop understandings of weighing up the arguments	Individual	Generalising Analysing Justifying
Exploration / Reshaping: Students review their discussion text and prepare for conferencing with peers then teacher.	To provide purpose for writing. To gain confidence in oral exposition. To assess students' understandings of the genre.	Individual or groups	Speaking Listening Writing
Reflection: What have we learned about Social literacy focus? ie how the values we express always affect other people. And the purpose, structure and language features of discussion genre.	To articulate what we know	Whole class	Generalising Recalling Analysing Evaluating

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The National Languages and Literacy Institute of Australia Limited

Overview

In 1990 an important step was taken to raise the focus on language and literacy issues through the creation of the National Languages and Literacy Institute of Australia Limited (NLLIA). The NLLIA brings together in one organisation most of Australia's leading language and literacy educators, researchers and policy advisers in fields including English language literacy, Languages Other Than English, English as a Second Language, Aboriginal languages, Interpreting and Translating, and Australian Sign Language.

The NLLIA provides advice to Commonwealth, State and Territory governments, as well as business, unions and the general community, on the full range of language matters. It has a key role in proposing and commenting on policy.

Working in co-operation with government, industry and the community, the NLLIA also initiates, responds to and manages research and development activities aimed at improving Australia's language resources. A great deal of research is needed so that Australia can make the most of its unique language heritage and so that educational programs in second language learning can be successful.

Through its network of research and development centres in universities around Australia, and the Literacy and English as a Second Language networks, the Institute provides educational and human resource consultancy services which relate to the goals of the Australian Language and Literacy Policy. The NLLIA also facilitates, conducts and disseminates both basic and applied research in linguistics, cross-cultural communication, and language and literacy education.

Objectives

The NLLIA offers national leadership and guidance on language and literacy education issues by:

- providing professional development activities for language and literacy lecturers, teacher trainers and teachers
- facilitating and conducting research needed to improve practice in language and literacy education
- regularly assessing language education needs and providing advisory and consultancy services to government, unions, business and the community on relevant language issues
- creating and operating a database and clearinghouse on language and literacy education issues and regularly publishing information from these.

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